NATUR CYMRU

A Review of WILDLIFE in Wales

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- The pine marten – *our greatest enigma?*
- Johannesburg – *a future for nature?*
- Llên y llysiau – *rhedynen gyfrdwy*
- Seeing black grouse through the trees
- Opening up the forest – *Newborough*
- How to house sparrows
- Common cord-grass in Wales
- Re-introductions – *the wider benefits*
- Welsh islands round-up
- Hela'r carlwm

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Golygydd/ Editor: **James Robertson**
Tel: 01248 385602
jm.robertson@ccw.gov.uk

Golygydd cynorthwyol/Assistant editor: **Mandy Marsh**
Tel: 01248 385574
m.marsh@ccw.gov.uk

Natur Cymru
Maes y Ffynnon
Penrhosgarnedd
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Gwynedd
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Cyhoeddir ***Natur Cymru*** dair gwaith y flwyddyn, ar ddiwedd Chwefror, Mehefin, a Hydref (rhifynnau Gwanwyn, Haf, a Gaeaf). Cefnogir y cylchgrawn gan bartneriaeth o gyrff sy'n aelodau o Grŵp Bioamrywiaeth Cymru. Y rhain yw: Cyngor Cefn Gwlad Cymru, y Comisiwn Coedwigaeth, Cynulliad Cenedlaethol Cymru, Amgueddfeydd ac Orielau Cenedlaethol Cymru, Cymdeithas Frenhinol er Gwarchod Adar, Ymddiriedolaethau Bywyd Gwyllt Cymru, a WWF.

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Bwriedir i ***Natur Cymru*** hyrwyddo a chyfnewid gwybodaeth am fioamrywiaeth a hyrwyddo dadl. Nid yw'r farn a fynegir yn y cylchgrawn hwn o anghenraid yn farn y noddwyr. Anfonwch erthyglau ar gyfer y rhifyn nesaf, yn y Gymraeg neu'r Saesneg, erbyn diwedd mis Rhagfyr 2002. Os oes gennych wybodaeth, erthyglau neu waith celf y credwch a allai fod o ddiddordeb i'r darllenwyr, cysylltwch â'r Golygydd os gwelwch yn dda.

Natur Cymru is intended to promote the exchange of information about biodiversity and encourage debate. The views expressed in this magazine are not necessarily those of the sponsors. Please submit articles for the next issue, in Welsh or English, by the end of December 2002. If you have information, ideas for articles or artwork which you think might be of interest to readers, please contact the Editor.

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Llun y clawr/Cover photo: Ponies graze on Conwy mountain by Stewart Campbell

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Golygyddol/Editorial ..... 2 – 3
• James Robertson

The pine marten in Wales – *our greatest enigma?* ..... 4 – 8
• Johnny Birks, Tony Braithwaite and John Messenger

Johannesburg – *a future for nature, or business as usual?* ..... 9 – 11
• Morgan Parry

In view of the wind ..... 12 – 14
• Malcolm Smith

Llên y llysiau – *rhedynen gyfrdwy* ..... 15 – 17
• Twm Elias

Seeing black grouse through the trees ..... 18 – 21
• Patrick Lindley and Dave Smith

Opening up the forest – *a new prospect for Newborough* ..... 22 – 26
• James Robertson

How to house sparrows – *colonial nest boxes boost house sparrow numbers* ..... 27 – 31
• Tony Jenkins

The history, status and control of common cord-grass in Wales ..... 32 – 34
• Peter Rhind

Re-introductions – *the wider benefits* ..... 35 – 36
• Ian Carter

Welsh islands round-up – *north Wales* ..... 37 – 39
• Geoff Gibbs

Wil Jones 40
• Tom Pritchard

Hela'r carlwm ..... 41 – 42
• Duncan Brown

Nodweddion **arferol/Regular** features:

Nodiadau o'r Cynulliad/Assembly notebook • Gethyn Williams 43
Green bookshelf/*Silff lyfrau amgylcheddol* • Andew Lucas/James Robertson 44
Marine matters/*Materion morol* ..... 45 – 46
Biodiversity News 46
Natur y byd/*Nature at large* • Hywel Roberts 47
Nature in reserve/*Natur mewn gwarchodfeydd* • Michael Hughes 48

Golygyddol

Mae'n fraint cael byw a gweithio yng Nghymru, ac mae'n fwy fyth o fraint bod â swydd fel yr un sydd gennyf i: rhoi cylchgrawn ynghyd ynghylch bywyd gwyllt bendigedig Cymru, a'r materion sy'n effeithio arno. Rydw i angen fy atgoffa fy hun, a darpar gyfranwyr, mai eich diddordebau chi a ddaw yn gyntaf – mae'r cylchgrawn ar gyfer eich pleser chi ac er eich budd chi. Ond sut y gwn i beth rydych chi ei eisiau?

Er mwyn cael ateb, anfonwyd dau gant o holiaduron gyda'r rhifyn diwethaf, ac mae tua 100 ohonynt wedi dod yn ôl. Mae pobl sy'n ymhél â marchnata yn dweud wrthyf fod cael 30% o bobl i ymateb i holiadur yn cael ei ystyried yn dda, felly mae cael bron i 50% ohonoch i ymateb yn eithriadol o dda. Gwell fyth yw ansawdd yr ymatebion, sydd wedi rhoi i mi a Mandy gyfoeth o wybodaeth ynghlwn â beth rydych yn ei hoffi orau a beth rydych yn ei hoffi leiaf, a sut y gallwn wella'r cylchgrawn. Mae'n dda gwybod bod *Natur Cymru* yn ymddangos fel pebai wedi canfod y cydbwysedd cywir, ac wedi cael cymaint o negeseuon o gefnogaeth. Diolch i bawb a atebodd.

Y pwnc a oedd ar frig y rhestr o bethau poblogaidd oedd rheoli cynefinoedd. Gellir rheoli mewn sawl ffordd, gan gynnwys torri coed. Yn y rhifyn hwn rydw i'n adrodd am freuddwyd a all, gyda chydweithrediad a phenderfyniad, ddod yn wirionedd; ailffurfio a chrebachu planhigfa fawr sy'n ymestyn ar draws un o'r systemau twyni tywod gorau yn y byd. Bydd rhifyn y Gwanwyn yn adrodd ar gyfres o brosiectau cyffrous i adfer cynefinoedd ar hyd a lled Cymru – storïau sy'n cynnau'r gobaith bod cadwraeth o'r diwedd yn cael y sylw dyledus.

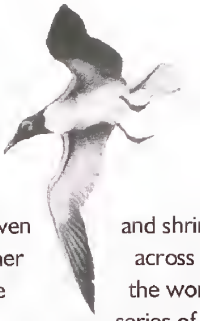
Ysgrifau yn sôn am rywogaethau oedd eich ail ddewis, gyda nifer o geisiadau yn gofyn am fwy o erthyglau ar adar. Yma gallwch ddarllen am randiroedd aderyn y to, am gynnydd y rugiar ddu, am ailgyflwyno'r barcud coch, am bele'r coed (sy'n anodd ei ddal) ac am garlymod yn y gaeaf. Sonnir am blanhigion mewn erthyglau ar y rhedynen gyfrdwy a'r cordwellt.

Er y peth cynnydd a wnaed yn Uwch-gynhadledd y Byd yn Johannesburg, ni fydd y materion a godwyd gan chwe biliwn o bobl sy'n byw mewn un blaned fechan werdd yn diflannu. Tra mae'r galw am ynni yn cynyddu, felly hefyd y cynydda'r posibilrwydd o gael newid cataclysmig yn yr hinsawdd oherwydd llygredd. Efallai y byddwch yn dod ar draws un dewis glân, sef ynni gwynt, ar arfordir cyfagos. Ond yn ôl Malcolm Smith, dydi'r ffynhonnell ynni adnewyddol alltraeth yma ddim heb ei phroblemau, ychwaith.

Does gennym ni ddim prinder o storïau da i'w cynnwys, na phrinder o ysgrifenwyr i wneud cyfiawnder â nhw, felly byddwn yn edrych ar y posibilrwydd o gynyddu maint ein cylchgrawn gan lunio pedwar o rifynnau bob blwyddyn o'r haf nesaf ymlaen. Os na chawsoch holiadur, ac os oes gennych unrhyw syniadau eraill ynghylch sut i wella'r cylchgrawn, cofiwch gysylltu â ni. Pam nad edrychwch ar ein gwefan newydd, **www.naturcymru.org.uk**, a rhoi gwybod inni beth rydych chi'n ei feddwl ohoni? Y cymorth mwyaf, fodd bynnag, fyddai i chi gynorthwyo tanysgrifiwr arall i ymrestru. Amgaeir ffurflen i chi ei phasio ymlaen, neu pam na wnewch chi ei defnyddio i danysgrifio fel anrheg Nadolig ar gyfer ffrind neu berthynas?

James Robertson

Editorial



It is a privilege to live and work in Wales, and even more so to have a job like mine: putting together a magazine about Wales' glorious wildlife, and the issues affecting it. I need to remind myself, and prospective contributors, though, that your interests come first – the magazine is for your pleasure and benefit. But how do I know what you want?

To look for the answers, two hundred questionnaires were sent out with the last issue, and nearly 100 have come back. Marketing people who know about these things tell me that a 30% return is considered good, so nearly half returned is spectacularly good. Even better is the quality of the responses, which have given Mandy and me a wealth of information about what you like best and least, and how we can improve the magazine. It is good to know that *Natur Cymru* seems to have found the right balance, and to have received so many messages of support. Thanks to all who replied.

Photo: WWF

Rhys Davies (left) is one of four WWF Earth Champions who visited South Africa during the Summit.

The subject that topped the popularity list was the management of habitats. Management can take many forms, including cutting down trees. In this issue I report on a dream that, with cooperation and determination, could become reality; the re-shaping and shrinking of a great plantation that stretches across one of the finest sand dune systems in the world. Our Spring edition will report on a series of exciting habitat restoration projects across Wales – stories which give hope that conservation has really turned the corner.

Features on species were your second choice, with several requests for more articles on birds. Here you can read about house sparrow tenements, black grouse on the up, re-introducing the red kite, the elusive pine marten and observations of white stoats in winter. Plants are featured in articles on royal fern and common cord-grass.

For all the modest progress at the Earth Summit in Johannesburg, the issues raised by six billion people living on one small green planet will not go away. As the demand for energy rises, so does the prospect of cataclysmic climate change due to pollution. One clean option, wind energy, may be heading for a coast near you. Malcolm Smith reports that even this off-shore renewable energy source is not without its problems.

With no shortage of good stories to cover, and the writers to do them justice, we will look hard at the possibility of increasing the size of the magazine, and moving to four issues each year from next summer. If you did not get a questionnaire, but have any thoughts about other improvements we can make, please get in touch. Why not look at our new web-site, **www.naturcymru.org.uk**, and let us know what you think of it. The greatest help, though, would be to enrol another subscriber. A form is enclosed for you to pass on, or why not use it to take out a subscription as a Christmas gift for a friend or relative?

James Robertson

The pine marten in Wales – *our greatest enigma?*

Photo: D. Balharry.

Male pine marten in winter pelage feeding in a rowan tree.

The Principality's rarest mammal is so elusive that some believe it to be extinct. Gathering convincing evidence of pine martens under these circumstances is a major challenge for naturalists. ***Johnny Birks***, ***Tony Braithwaite*** *and* ***John Messenger*** *of The Vincent Wildlife Trust (VWT) explain the current situation.*

For today's naturalist there are few mysteries to rival the ethereal status of the pine marten in Wales. Close to vanishing point for over a hundred years, this agile, cat-sized member of the weasel family defiantly refuses to join the list of extinctions. From Forrest and Bolam in the early 1900s, to CCW staff such as Duncan Brown and Ian Morgan, naturalists have confirmed the persistence of martens in Wales (and, to a lesser extent, the Marches) through the twentieth century. As Frances Cattenach reported in *Natur Cymru* no.2, reliable records of Welsh pine martens continue to trickle in at the start of the 21st century. Although Snowdonia has long been regarded as the marten's Welsh stronghold, many recent records come from further south, some of which we describe below.

Recent evidence

A marten encounter can be a moving experience for the modern naturalist, as one of us can testify: Tony saw one in Brechfa Forest, Carmarthenshire, one late May afternoon in 1999; the distinctive creamy throat and ear tips stood out against the mid-brown body fur as the animal climbed with astonishing speed up a steep bank. In September 1996 Chris Hall had a famous torchlight encounter in the grounds of Plas Tan-y-Bwlch, Meirionydd. The prominent ears, pale front and long bushy tail were

clearly visible as a large marten bounded across a track in front of him, jumped over a wall and crossed a ravine via a tree trunk. Reports come from a variety of observers: Llandovery District foresters Steve Pocock (Brechfa Forest, 1997) and John Dodd (Crychan Forest, 1999) enjoyed clear sightings of martens displaying their remarkable agility up trees; while deer stalking near Golden Grove, Carmarthenshire, gamekeeper Malcolm Bessant watched one in early 1997 moving from tree to tree; another 'tree' encounter involved farmer Brian Jones whose dogs chased a marten up a tree near Tirabad, Brecknock when he was moving sheep in April 1999. In places this Welsh evidence extends over the border: forester Tom Fairfield has seen martens three times in one part of West Herefordshire over the past ten years.

Photo: Frank Greenaway.

Pine martens are agile tree climbers.

These sightings are the latest links in a tantalising chain of evidence stretching back to the early 1800s when the species was apparently better-established, though probably uncommon even then. Whilst sightings represent valuable evidence of rare species, they have to be treated with caution because of the risks of misidentification; corpses or photographs are more valuable. Frustratingly, although corpses are still reported from time to time, no specimen from Wales has been retained for examination since November 1950, when an adult female was killed in a rabbit snare at Glyn Collwn between Brecon and Methyr Tydfil. The only indisputable recent evidence is pine marten DNA extracted from marten faeces from Gwydyr Forest near Betws-y-Coed in 1996.

The pine marten situation is similar in northern England, where sparse populations hang on in upland areas such as Lakeland, the Cheviots, the Pennines and North York Moors. But martens are not rare everywhere: in the Scottish Highlands and parts of Ireland a steady recovery is under way, offering hope that we might one day see a resurgence in England and Wales when conditions are right. Two important questions face us now in Wales: how can we improve our understanding of the pine marten and its needs in the Principality? And what action can we take to promote natural recovery in today's populations that may represent locally distinctive relicts that have persisted since the Ice Age?

Marten habitat

Nowadays the pine marten is so elusive that it is impossible to study by methods such as radio-tracking. This leaves us reliant on the observations of early naturalists, and on gleanings from modern studies in countries where the species is more accessible. Caution is needed with both approaches, as much has changed in the Welsh landscape since martens were last common enough to observe readily; equally, huge ecological contrasts exist within the pine marten's European range, making it unwise to assume that behaviour observed in one area may be expected in another.

We can learn lessons from our predecessors about habitat selection. Over most of its European range the pine marten is associated with extensive forest. In Britain and Ireland, however, we cleared our forests earlier and more completely than any other country (down to less than 5% cover in Wales at its nadir), forcing our martens to adapt or die. Fortunately our topography provided alternative three-dimensional habitats for martens to occupy, and many naturalists noted the pine marten's choice of mountains, cliffs and crags in preference to forests. Forrest[1] wrote of the marten in Wales "it has learned by experience that the woods do not secure it sufficiently from its enemies, for at the present day the marten has taken to the rocks as a dwelling place rather than to the thick woods…".

Similarly, Bolam[2] refers to English and Welsh martens "almost invariably inhabiting mountain tops, often far away from trees", and notes that this behaviour is reflected in local Welsh names for the species: "In Wales, the Marten is generally called *Pala-coed*, or *Bela-coed* i.e. 'Wood Marten', but in some districts *Bela-graig*, or 'Rock Marten', is the more usual name". Many place names include *bele*, *bela* or *pele*, attesting to the widespread historical presence of martens in Wales and their place in local culture. Some suggest associations with rocky places, such as Cerrig Bela ('Marten Stone') near Llanddewi Brefi, and a rock named Castell Bele ('Marten's Castle') near Dolwyddelan.

So, when searching for martens today, we should not focus exclusively on forests. Even though forest cover has grown since the early 1900s (currently 14% in Wales, compared with the EU average of 32%), the legacy of an association with open, rocky country may still influence the species' behaviour. This is especially likely if our forests still fail to meet some of the marten's needs. For example, European studies have stressed the importance to breeding females of abundant arboreal cavities within forests. Suitably sized tree-holes are preferred as breeding dens because of their insulative properties and the protection they afford against predators. However, such cavities are characteristic of old trees that are rare in Welsh woodlands due to their management history. Fox predation is recognised as a further constraint on marten populations in Europe, and in Britain this effect is likely to be serious where foxes are abundant and woodland cover is scarce.

Too elusive to survey easily?

Whilst passive recording has kept tabs on the pine marten situation in Wales, systematic surveys have foundered for the lack of distinctive field signs. Two recent surveys based mainly on systematic searches for droppings or 'scats' drew conflicting conclusions: the 1987-88 JNCC survey,[3] which covered a wide range of marten habitat and included a detailed collation of recent and historical records, concluded that martens in Wales were "thriving at the time of the survey, or at least thriving in comparison with several of the English populations". A 1994 survey with a narrow focus on forests and little reference to recent records concluded that "there is no viable population of martens in Wales" and that the species is "functionally extinct".[4] The fact that these two surveys, separated by only a few years, should reach such different conclusions raises questions about the reliability of the method. Recently, DNA evidence revealed that a significant proportion of 'marten' scats collected by experienced surveyors were from foxes or polecats, and the error rate was highest in sparse marten populations. This revelation further erodes our confidence in scat surveys, at least until the time when DNA determination is a cost-effective option. Painful though it is to accept in this age of 'quick and dirty' status assessments, monitoring the pine marten in Wales requires a very different approach, involving a patient, open-minded willingness to consider all evidence over a substantial time period.

Photo: John Messenger.

Welsh pine marten pelts.

MARTRECS – The VWT marten records database

Since the mid-1990s the VWT has acted as a focal point for reporting evidence of martens in England and Wales. Using non-leading questions within structured interviews we have assessed 320 post-1989 sightings

reported from Wales and the Marches (these must represent only a tiny proportion of human-marten encounters). Our approach enables us to attach a confidence score (on a scale of 1-10) to each record, based upon the quality of the sighting and the experience of the observer. Thus we can discriminate between reports that were probably martens (score >5) on the evidence available, and those that were probably not (score 5 or less). A subset of the former involves 'high confidence' sightings (score 8+) of exceptional quality, typically reported by experienced naturalists. The distribution of these 86 most reliable sightings is illustrated on the map and shown in the central column in *Table 1*. This reveals the extent to which reliable records are concentrated in the three Vice Counties Caernarvon, Carmarthen and Merioneth. The importance of Carmarthen may be partly due to greater recording effort in recent years. Nevertheless, it challenges the 20th century wisdom that Snowdonia is the species' main Welsh stronghold.

Watsonian Vice County	Post 1989 Records **Score = 8+**	**All records**
Anglesey	2	6
Brecon	6	26
Caernarvon	**10**	**47**
Cardigan	4	20
Carmarthen	**24**	**52**
Chester	0	10
Denbigh	5	30
Flint	0	1
Glamorgan	4	11
Hereford	3	16
Merioneth	**14**	**35**
Monmouth	1	10
Montgomery	6	15
Pembroke	1	6
Radnor	2	14
Salop	2	18
West Gloucester	1	1
Worcester	1	2
Total	**86**	**320**

Table 1. *The distribution of reported sightings of pine martens across Vice Counties in Wales and the Marches, showing (in bold type) the three counties that have contributed the most records.*

Are conditions right for the recovery of the pine marten in Wales?

The persistence of sparse marten populations in Wales indicates viability, yet the apparent lack of recovery suggests that all is not well. For a species that thrives best in extensive, prey-rich forests with abundant tree cavities we can predict the main constraints in Wales:

- carrying capacity is low because a) forest cover remains limited and fragmented within an inhospitable matrix of managed agricultural land, and b) many of the larger blocks are upland plantations where prey diversity and biomass are low
- reproduction and recruitment are constrained by the scarcity of secure breeding sites within forests
- rocky uplands offering an alternative refuge are heavily grazed and prey-poor, thereby limiting population productivity
- high fox abundance raises mortality rates among martens foraging or dispersing in open country
- accidental mortality due to predator control (notably traps, snares and poisons, legal or otherwise) imposes an additional burden upon vulnerable populations.

Action for the future

If this assessment is correct, then changes are required before we can expect a natural recovery of the pine marten in Wales. Equally, reintroduction is unwise if conditions remain suboptimal, notwithstanding the adverse effect it might have upon the genetic integrity of Welsh martens. Put simply, the recovery of martens in Wales lies principally in foresters' hands.

In recognising that, we must patiently accept the forester's primary objectives and timescale. A large, carefully planned increase in the area of natural forest (see George Peterken's article 'Restoring networks of forest habitats' in *Natur Cymru* no.3), ideally concentrated in zones currently occupied by martens, should guarantee the species' future in the long term. In the medium term, management of existing woods and forests needs to change slightly so as to provide an adequate supply of old, cavity-bearing trees for successful marten reproduction in future.

In the short term, provision within forests of abundant artificial structures that reliably mimic the properties of natural tree cavities should improve reproductive performance. Encouragingly, through its strategy document 'Woodlands for Wales', the National Assembly for Wales is committed to changes in forestry practice that should benefit pine martens. What better measure could there be of the strategy's success than the widespread re-establishment in Wales of the *Bele'r coed*?

Photo: Johnny Birks.

Pine marten den in a dead scots pine.

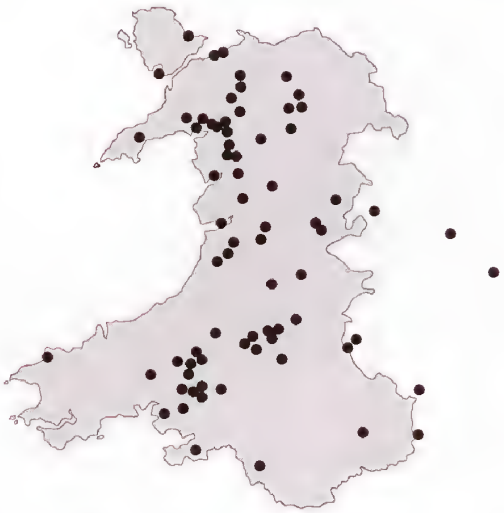
Ble mae'r Bele?

Mae ymchwil ddiweddar yn awgrymu nad yw'r bele wedi diflannu o Gymru – ond mae'n anodd iawn cael tystiolaeth bendant. Mae unigolion profiadol wedi gweld yr anifail mewn coedwigoedd yn ystod y blynyddoedd diwetha' ac fe gasglwyd sampl o DNA'r bele yn 1996.

Mae Ymddiriedolaeth Bywyd Gwyllt Vincent wedi dosbarthu'r gwahanol gofnodion, gan nodi fod 86 o rai eitha' sicr ers 1989, yn benna' yn siroedd Caerfyrddin a Gwynedd. Er y gall addasu at dir creigiog, y gred yw fod diffyg coedwigoedd llawn-ysglyfaeth, prinder hen geubrennau ar gyfer magu a bygythiad llwynogod wedi effeithio'n ddrwg ar y bele. Yr ateb, felly, yw adfer coedwigoedd naturiol, amrywio patrymau rheoli a chreu 'ceubrennau' artiffisial. Fe ddylai strategaeth goedwigaeth y Cynulliad Cenedlaethol helpu yn hynny o beth.

Reporting pine martens

The VWT welcomes all reports of pine martens from England and Wales. We are especially keen to hear about any preserved specimens of known origin since the 1950s. Please contact us at The VWT, 3&4 Bronsil Courtyard, Eastnor, Ledbury, Herefordshire HR8 1EP; tel. (01531) 636441; email vwt@vwt.org.uk



The distribution of reported post-1989 sightings of pine martens in Wales and the Marches that scored 8 or more on the VWT's confidence scale.

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Johannesburg – *a future for nature, or business as usual?*

Photo: Courtesy Welsh Assembly Government.

First Minister on his bike at the Ivory Park Eco-village.

***Morgan Parry** reports on the latest Earth Summit, and the environmental challenges which the world now faces.*

Photo: Courtesy Welsh Assembly Government

Meeting the Eco-village representatives.

Ten years ago in Rio, world governments took a major step forward by recognising the significance of biodiversity and its importance for humankind. The Convention on Biological Diversity has shaped much of our public policy and practical action on conservation ever since. As an issue it was never going to be high on the agenda of this summer's World Summit though, and the final text from Johannesburg adds nothing to the Rio accords. But the commitment of the Welsh Assembly Government to the process of sustainable development, and the involvement of the First Minister in Johannesburg, raises expectations that biodiversity will get a higher profile in economic decision making.

In the run-up to Johannesburg, against a global backdrop of continuing species loss and habitat destruction, there had been pressure from a number of NGOs (Non-governmental Organisations) to get biodiversity debated. But with poverty alleviation occupying political minds, the UN secretariat was determined that Johannesburg should not be 'Rio + 10' and would be a people-focussed world summit rather than an environmental Earth summit. Since it already had an international process in place, however imperfect, biodiversity took a back seat.

The few words accorded to biodiversity in the final 'Plan of Implementation' raise an interesting possibility. They commit governments to 'significantly reduce' loss of biodiversity by 2010, and one of the signatories was the United States.The US had previously refused to endorse the Convention on Biological Diversity, with its target to 'halt' the loss of biodiversity by 2010, but its acceptance of the weaker Johannesburg wording may indicate a willingness to join the club. If it does so, progress may be made on issues such as genetic property rights and the funding of conservation programmes in developing countries.

For many, the World Summit's biggest challenge was to tame the monster of globalisation, or (to use Summit-speak) to make globalisation work for sustainable development. The World Trade Organisation's powers have multiplied in the ten years since Rio, and its agenda has been the removal of all obstacles to free trade. NGOs led by Friends of the Earth insisted that environmental protection and development goals should not be compromised, a position that won the backing of grass roots activists in developing countries. Most big issues were fudged in Johannesburg, but this one was fought over to the death, and there were some unlikely combatants. Ethiopia, which as one of the poorest countries on earth is supposed to benefit from free trade, was amongst those insisting that the development and environmental agreements have primacy. The US disagreed, and even after most delegates had gone home they were quibbling about what they had signed up to, but the wording was retained in the final statement. It remains to be seen whether the WTO carries on as if Johannesburg never happened, but an important principle has been established.

For most of the issues addressed by the Summit, the results reflect the narrow interests of a few powerful countries, rather than the wishes of the many. An overloaded agenda and a lack of focus on overarching global challenges contributed to the sense of failure. Many previous agreements, such as that on toxic chemicals, were watered down rather than augmented by the Summit. WWF was pleased that lobbying on oceans recovery produced some positive outcomes through recognition of the ecosystem approach, a target for replenishment of depleted fish stocks by 2015 and the elimination of harmful subsidies. The European Union now has the opportunity to be the first region to meet the target, by reforming its Common Fisheries Policy. Agriculture would benefit from similar reform, but the US, France and others prevented agreement on subsidies in Johannesburg.

For a conference that was supposed to address sustainable development, there was scant recognition of the links between poverty alleviation and environmental protection. Take the deal on water: the Summit agreed to halve the number of people without access to sanitation and clean water supplies by 2015, a laudable aim. But where will that water come from? Will massive dams and river diversions be the answer, with all the habitat destruction and cross-border conflicts that those entail? By failing to link this agreement to one on river basin management, so that this natural resource is utilised sustainably, the Summit has failed to learn lessons from the past.

Action at home: a leading role for Wales?

The World Summit on Sustainable Development was much more than a meeting of Heads of State – it brought together local and regional governments, business groups, academics and non-governmental organisations. Assembly First Minister Rhodri Morgan led a small delegation from Wales visiting, amongst other places, a zero energy housing development sponsored by WWF which may stimulate new thinking back home. He also co-chaired a global conference of regional governments to promote sustainable development, leading to the signing of the 'Gauteng Declaration'. When we look back on Johannesburg, we may find that the progress of sustainable development was better served by the involvement of lower tiers of government such as the Welsh Assembly, than by the largely empty gestures of the heads of state.

Sustainability will be achieved only if the sum total of small decisions taken by public authorities, business and consumers around the world combine to give

substance to global conventions and protocols. The Assembly Government has considerable powers to guide such decisions in Wales, and is acknowledging the global impact of its decisions through the ecological footprint project, an initiative no other government has attempted.

Rhodri Morgan has claimed a leadership role for Wales on sustainable development, but so far it's the process that's been distinctive rather than the policies or actions, although there are some promising proposals in the pipeline. That process (arising from the Assembly's sustainable development scheme) has had the support of a broad coalition of public agencies, voluntary organisations, business people, academics and politicians of all parties, and will soon be enabled by a Sustainable Development Forum for Wales.

A huge responsibility now rests on the Assembly Government to turn the process into real action, one outcome of which must be the survival and vitality of Wales' wildlife and habitats. The Assembly has provided solid support and encouragement to local authorities and the Countryside Council for Wales, who implement many biodiversity action plans at a local level, but ultimately the fate of our wildlife depends on more powerful forces which must be controlled. Economic development is not about making Wales competitive at the expense of other nations, and environmental and social costs cannot be exported overseas. A radical new approach to agriculture and industrial development is required: these have been highly damaging to Wales' environment and society in the past, and the agencies which promote them must be reformed. Sustainability has to become their business, and their central organising principle.

There will be political debate about how those reforms can be achieved, but the Assembly Government must be courageous in turning its principles into actions. If it comes back from Johannesburg with a 'business as usual' agenda, its leadership role will be lost.

Morgan Parry is Director, WWF Cymru.

Johannesburg – gobaith i natur neu fusnes fel arfer?

Os bydd Llywodraeth y Cynulliad yn parhau fel o'r blaen ar ôl Johannesburg, bydd wedi colli'r cyfle i arwain. Roedd presenoldeb Prif Weinidog Cymru yn Uwch-Gynhadledd y Ddaear yn codi gobeithion y bydd y pwnc yn cael rhagor o sylw wrth wneud penderfyniadau economaidd. Mae sgôp gan Lywodraeth y Cynulliad, ond y broses sy'n hynod hyd yn hyn, nid y canlyniadau. Bydd y broses yn cael hwb pellach gan Fforwm Datblygu Cynaliadwy Cymru ond mae cyfrifoldeb ar y Llywodraeth i droi'r dweud yn wneud. Mae angen agwedd newydd radical at amaeth a datblygu economaidd gyda chynaliadwyedd yn rhan ganolog o waith yr asiantaethau sy'n eu hyrwyddo.

Er nad ychwanegodd yr Uwch-Gynhadledd at benderfyniadau Rio ym maes bioamrywiaeth, roedd yr ychydig eiriau a gafodd y maes yn codi pwynt diddorol. Er bod yr Unol Daleithiau wedi gwrthod arwyddo Confensiwn Rio i "atal colli bioamrywiaeth", y tro yma, arwyddodd y Cynllun yn galw am "leihau'n sylweddol" ar golli bioamrywiaeth erbyn 2010. Diddordebau ychydig wledydd cyfoethog sydd amlyca' yng nghanlyniadau'r Uwch-Gynhadledd gyda rhai cytundebau cynharach yn cael eu glastwreiddio. Ond roedd camu ymlaen wrth ystyried adfer y cefnforoedd hefyd. Sialens fwya'r Uwch-Gynhadledd oedd dofi bwystfil globaleiddio. Roedd NGOs dan arweiniad Cyfeillion y Ddaear yn mynnu na ddylai masnach rydd beryglu'r nod o ddatblygu a gwarchod yr amgylchedd.

Cafwyd cefnogwyr annisgwyl, gan gynnwys Ethiopia, un o'r gwledydd tlawd sydd i fod i elwa fwya' o fasnach rydd. Prin oedd y cysylltiadau a wnaed rhwng datrys tlodi a gwarchod yr amgylchedd. Wrth alw am haneru nifer y bobl heb ddŵr glân a charthffosiaeth, methwyd â chysylltu hynny â defnydd cyanliadwy. Wrth edrych yn ôl efallai y gwelwn fod gwasanaeth gwell wedi'i wneud gan lefelau is o lywodraeth, fel y Cynulliad Cenedlaethol, na chan eiriau gwag penaethiaid y gwladwriaethau.

In view of **the wind**

Photo: Amec Border Wind.

The hunt is on for sources of renewable energy to replace fossil fuels, and wind power is the front-runner. As giant turbines on Welsh hilltops have proved controversial, off-shore wind farms may be the answer. ***Malcolm Smith*** *sets the scene, and looks at the merits of 'blades at sea'.*

Photo: Tony Oliver

Traditional wind power.

Year in and year out, tens of thousands of visitors to the sedate, seaside resort of Llandudno venture by train, car or – more rarely – on foot to the summit of the nearby Great Orme's Head, the massive limestone headland that dominates the town, and marvel at the incredible sea views.

A grey-blue tablecloth of open water stretches north beyond the Isle of Man, west to the Irish coast and east to the dunes of Formby and Southport. Apart from a few passing ships and a distant gas production platform, it is a view largely devoid of industrial development.

But that is about to change. Some of Britain's first – and tallest – electricity generating wind turbines may soon dominate the sea views to the east of the Orme. Thirty turbines are proposed 8 kilometres off Abergele and another thirty off Prestatyn. More may be planned.

According to the British Wind Energy Association (BWEA), 1,300 offshore wind turbines could produce a little under 2% of the UK's electricity needs. They base their calculation on each one producing 2 megawatts of electricity when it is turning. Each one would be the height of Big Ben, nearly 300 feet.

Well over three hundred smaller turbines – half the UK total – already sprout from many of the rolling hilltops of mid-Wales. Another nine hundred or more are at various planning stages. Many people find these three-bladed, wind-swooshing, giant white towers perfectly acceptable, even attractive. After all, they emit no pollution and – compared with conventional power stations – are much easier to decommission and dismantle. But there are others who argue that the Welsh upland landscape of heather moors and coarse, grass-covered hills has been industrialised in the frantic search for greener means of generating electricity.

So could building large aggregations of turbines off our coast be more acceptable, especially if they were constructed in places where they were not in conflict with cherished sea views or wildlife?

Any visitor to the British seaside knows just how windy our coast can be. A European Commission study in 1995 estimated our offshore wind resource, within 30 kilometres of the coast, as capable of producing around three times our total electricity demand. We are endowed with a third of the marine wind energy in Europe. Lucky us. It's why the BWEA claims that "an area of sea roughly the size of London would be enough to provide 10% of the UK's electricity needs".

But there are no wind turbines planned in or around London. Nor in Cardiff for that matter, even though industrial areas nearby might be a very acceptable location for some energy generating developments. Instead, the most rural locations most distant from urban centres where most of the electricity is consumed seem to be constantly in the front line when it comes to producing it. Perhaps that's what 'green energy' refers to.

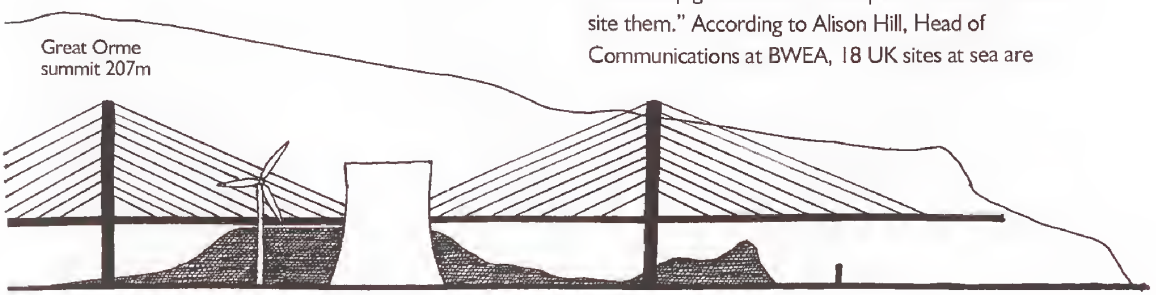
In order to cut emissions of greenhouse gases and other airborne pollutants, the UK Government has a target of generating a tenth of our electricity from renewable sources by 2010. In theory, technologies such as solar panels, biomass, hydro generation using riverflow, and sea wave energy are all in the frame. But the only renewable source with the technology up and turning on a large scale is wind energy. Hence it dominates the market and the arguments.

Wind turbine technology is moving on apace. Most of the turbines turning in the wind on Welsh hills are relatively small by today's standards. Some of the earliest turbines generate only 0.3 megawatts each. That's enough to run just three hundred single bar electric fires. And they do that, of course, only when the wind blows.

When it doesn't, we still have to rely on conventional power stations burning gas, coal or nuclear fuel. And when it gets too windy, the turbines have to be switched off because their gear boxes can't cope with steady generation if the wind is blowing too strongly. This is why wind power needs to be a part of our energy generating strategy but cannot do the whole job.

The Countryside Council for Wales (CCW) – the Welsh Assembly Government's adviser on wildlife, landscape and access – is very concerned at the impact of air pollutants from conventional power stations using fossil fuels, in particular those burning coal. CCW therefore backs wind energy provided that the turbines don't compromise precious landscapes and wildlife nor diminish the experience of walking in the countryside.

"We support wind turbines at sea in principle, too," says Dr Maggie Hill, Head of CCW's Maritime and Earth Sciences, "but we need to assess the impact of each proposal in case they affect cherished sea views and sensitive wildlife. Well sited and carefully designed, sea wind farms could provide refuges for marine life, but if poorly sited they could damage seabed features or pose a threat if they are on the flight paths of seabirds. We have done a considerable amount of cutting edge work to draw up guidance for developers on where best to site them." According to Alison Hill, Head of Communications at BWEA, 18 UK sites at sea are



currently proposed for wind turbine construction. Three of these are in Welsh waters; two off the north Wales coast and one off Porthcawl.

In future, the bulk of wind-generated electricity is likely to be at sea. At the moment there is only one offshore wind farm operating in the UK. That's at Blyth in Northumberland with just two, albeit moderately large, turbines. A second, much larger one with 38 turbines, off the Norfolk coast, was recently given the go ahead.

How much of a visual impact large numbers of turbines will make is difficult to gauge – even with computer graphics – until they are built. Simon Reddy, Greenpeace's renewable energy campaigner, is upbeat:

"We acknowledge that visual impact must be a consideration, but their impact should be reduced if they are at least five kilometres out to sea. We think that the initial visual shock of seeing a new development like this will subside".

The advocates of wind energy point to its environmental benefits. If we generated a tenth of our electricity from wind we would reduce the production of carbon dioxide – a greenhouse gas – by around 5% and cut other pollutants a little too.

On the other hand, at times when the turbines hit the doldrums because there isn't any wind to turn them, or when the wind blows too violently for them to cope, conventional power stations are still essential. Effective energy conservation schemes in homes, offices and industry would reduce the need to produce so much electricity in the first place.

Nor do all wind energy developments need to be on a monumental scale. Small generators, perhaps linked to other forms of generation such as solar power or electricity generated from wood burning, could be developed in rural communities. There would need to be a lot more of this, but several US States and one or two European countries actively support such locally based renewable energy technology. It's a practical example of acting sustainably and CCW has earmarked a substantial amount of grant aid money to help local communities to start such ventures.

If the environmental benefits of wind-generated electricity are to be realised, and the environmental drawbacks minimised, building large turbines well out to sea in the least visually sensitive locations off our coast may be a much better option than scattering them across the hills of mid Wales.

Dr Malcolm Smith is a regular contributor on environment, travel and gardening to *The Times* and a number of magazines. He is the Senior Director of The Countryside Council for Wales. The views expressed are his own and do not necessarily reflect CCW policy.

Gweld y gwynt

Mae angen amrywiaeth o ddulliau gwyrdd o gynhyrchu trydan ond gwynt yw'r unig ffynhonnell sydd â'r dechnoleg yn barod i gynhyrchu ar raddfa fawr. Er mai'r dinasoedd sy'n defnyddio mwya' o ynni, yng nghefn gwlad y mae'r gorsafoedd ac mae hanner tyrbinau gwynt y DU yng Nghymru. Bellach, mae cynlluniau am dair gorsaf ger glannau Cymru hefyd.

Gallai gwynt o'r môr gynhyrchu tair gwaith y trydan sydd ei angen ar y DU ond mae cyrff fel y Cyngor Cefn Gwlad eisiau ystyried effaith gorsafoedd môr ar olygfeydd a bywyd gwyllt. Er y bydd golygfeydd yn newid, fe allai fod yn well i osod tyrbinau mawr ymhell allan yn y môr na'u gwasgaru nhw tros fryniau canolbarth Cymru.

Llên y llysiau – *rhedynen gyfrdwy*

gan **Twm Elias**

Prosiect a gychwynnwyd gan Gymdeithas Edward Llwyd yw Llên y Llysiau i gofnodi pob math o gysylltiad rhwng pobl Cymru a phlanhigion. Mae'n ceisio casglu gwybodaeth am y rhywogaethau o dan nifer o benawdau, gan gynnwys tarddiad yr enw, cyfeiriadau llenyddol, enwau lleoedd, cofnodion hanesyddol, a'r defnydd o'r planhigion. Os oes gennych unrhyw beth i'w ychwanegu at y manylion isod, cysylltwch â ***Duncan Brown*** *(rhif ffôn: 01286 650547 neu e-bost: dbrown.waunfawr@virgin.net).*

Enw Gwyddonol: *Osmunda regalis* (L.): Tarddiad ansicr yn dyddio o'r Canol Oesoedd yw'r enw *Osmunda*. Ceir amryw o ymgeisiadau ffansïol i'w esbonio, e.e. mai o'r Sacsoneg am 'nerth' y deillia, neu o enw personol – crybwyllir 'Osmund the waterman', oedd yn Sacson a guddiodd ei blant ymysg dail y rhedynen rhag y Daniaid, ac roedd hefyd yn un o enwau Thor y duw Scandinafaidd. Posibilrwydd arall yw y tardda o'r Lladin *os* (asgwrn) a *mundare* (glanhau), sy'n gyfeiriad at un o ddefnyddiau meddygol y planhigyn. Ystyr *regalis* yw brenhinol. (1, 2, 3).

Disgrifiad: Rhedynen fawr braff hyd at 4 – 6 troedfedd, ond weithiau hyd at 10 troedfedd gyda gwaelodion llafnau'r dail yn ffurfio twffyn trwchus. Y ffrondiau llystyfol ar rannau isa'r llafnau yn felynwyrdd, a'r ffrondiau rhywiol ar y blaenau yn glystyrau melyngoch. Y dail yn marw dros y gaeaf ac yn aildyfu yn y gwanwyn.

Dosbarthiad a Chynefin: Yr unig aelod Ewropeaidd o genws a theulu'r *Osmundaceae*. Dosbarthiad eang ond gwasgaredig trwy orllewin Ewrop yn tyfu ar gorsdir mawnog ac mewn coedlannau gwlybion, yn enwedig ar lawr gwlad. Weithiau ar greigiau mewn mannau cysgodol a llaith. Yn brin yn y gwyllt erbyn hyn oherwydd iddi gael ei chasglu gymaint yn y 19g a dechrau'r 20g i'w thyfu mewn gerddi ac oherwydd draenio corsydd. Cofnodwyd yn gyntaf yng Nghymru gan John Ray yn 1670: 'I have observed it in boggy places…in Wales.' (4)

Enwau Cymraeg eraill: cyfrdwy, cyfrdwy brenhinawl, rhedyn bonheddig, rhedyn cyfrodedd, rhedyn blodeuog, rhedyn y cadno, rhedyn y gors, rhedyn y dŵr, rhedyn Crist, rhedyn Mair, rhedyn bendigaid, lloer-redynen gyfrdwy, lleuadlys cyfrdwy, dibedoliad y meirch. (5, 6, 7)

Tarddiad yr enwau Cymraeg: "Cyfrdwy" yn hen enw ar nifer o redynnau (*kyffrdwy* 16g (8)); 'brenhinawl' a 'bonheddig'o *regalis*; 'cyfrodedd' yn cyfeirio at natur blethiedig y dail; 'cadno' oherwydd lliw ei ddail ffrwythlon. Yr elfennau 'Crist' a 'Mair' yn datgan ei bod yn rhinweddol/feddyginiaethol, ond 'lloer' a 'lleuad' (cyfeiriad at ffurf hanner lleuad y *pinnae* mewn rhai rhywogaethau o redynnau), yn codi o gymysgedd tacsonomegol yn y gorffennol. Er enghraifft, yn *Welsh Botanology* (1813) dosberthid y rhedynen fechan (*Botrychium lunaria*) – y lloer redynen – i'r un teulu â'r rhedynen gyfrdwy dan yr enw *Osmunda lunaria* (9), oherwydd tebygrwydd yn ffurf y dail ffrwythlon

mae'n debyg. 'Dibedoliad y meirch' yn gyfeiriad at hen goel, ond am y lloer redynen, fel arfer, y byddai march yn colli ei bedolau pe'i marchogid dros y rhedynen hon (10).

Defnyddiau Meddyginiaethol: Ar dudalen 48 o *Y Gestiana* (11) ceir y frawddeg ganlynol: 'Byddai cyrchu mawr o bell i Lyn Ystumllyn, am Elod, Rhedyn Cyfrdwy, a Chyrs i wehyddion; hefyd am amryw o lysiau prinion.' Cesglid y rhedynen gyfrdwy yn arbennig ar gyfer y llysnafedd gludiog geid yn y gwreiddyn a bonion trwchus y dail i wneud amryw o feddyginiaethau:

- Yn y llawysgrif o'r 16g a elwir *A Welsh Leech Book* (8) ceir y rysáit: 'Rhag torriad Assau. Gwna ddiod or kyffrdwy…a dwfr a dod blastr o beillied blawd haidd merlys a chagl devaid…ai roi yn blastr or tu allan ar ddiod or tu fewn…ac iach fydd.'

Llun: Jonathan Cox

Rhedynen gyfrdwy Osmunda regalis.

- Gwnaed eli neu bowltris ar gyfer cleisiau, yn enwedig y briwiau geid wrth ymladd, a phan dynnid cymal o'i le (2, 12). '…mae yn un o'r llysiau rhagoraf rhag ysigiadau mewnol ac allanol, esgyrn wedi eu tori, a chymalau wedi eu hysigo.' (13), ac '…i gryfhau esgyrn pan y byddont wedi torri…iddynt asio yn gynt.' (14)
- 'Mae eu gwreiddiau wedi eu berwi mewn gwin gwyn…yn glanhau yr arennau a'r bledren, a phibau y dwfr o bob mân raian a cherrig.' (13), ac '…i wneuthur dwfr yn helaethach i'r rhai sydd yn ei wneuthur yn rhy brin' (14).
- 'Gwelais hen bobl yn defnyddio llawer ar ei wraidd i esmwythau y gwynegon a'r gewynwst.' (13).
- Tybid bod potas ohono yn '…lladd pob math o lyngyr (13).

Defnyddiau eraill:

- Arferid berwi'r gwreiddyn mewn dŵr i gael startsh ac roedd galw mawr amdano ar un cyfnod i galedu neu stiffio llïn. (15).
- Daeth yn blanhigyn gardd poblogaidd yng ngerddi plasdai'r 19g ac yn darged i gasglwyr rhedyn. Parodd hynny iddi fynd yn weddol brin yn y gwyllt.
- Bydd garddwyr yn defnyddio compost (*Osmunda* fibre) o wraidd a bonion dail pydredig y rhedynen gyfrdwy fel y cyfrwng gorau i botio tegeiriannau tramor mewn tŷ gwydr. Mae'n gompost ffibraidd sydd ag ychydig o faeth ynddo, ond ddim gormod, sydd hefyd yn draenio'n dda tra ar yr un pryd yn cadw lleithder digonol. (16).

Coelion ac arferion:

- Yn Galway yn yr Iwerddon credid bod y rhedynen gyfrdwy yn blodeuo yn y nos ym Mehefin, ond bod y blodau'n diflannu cyn y bore – rhaid bod hynny'n wir oherwydd byddai'r 'hadau' yno erbyn y bore! (11).
- Yn yr Alban roedd un math o swyn garu angen 9 coesyn o'r rhedynnen gyfrdwy (17).

Mae **Twm Elias** yn ddarlithydd a threfnydd cyrsiau ym Mhlas Tan y Bwlch, Canolfan Astudio Parc Cenedlaethol Eryri.

Ffoto: Andrew Ferguson.

Royal fern *Osmunda regalis*

Regalis means 'royal' but the name *Osmunda* is of uncertain derivation. It may be from the Anglo-Saxon word for strength, or from a personal name – Osmund the waterman was a Saxon who hid his children from the Danes among fern-leaves and Osmund was also one of the names of the Scandinavian god Thor. Or it may derive from the Latin *os* (bone) and *mundare* (to clean), and refers to the medicinal uses of the plant.

First recorded in Wales in 1670, it grows on peaty fenland and in wet copses, particularly on lowlands. A large, sturdy fern that grows usually to 4-6 feet, the bases of the leaf blades form a thick tuft. The fronds on the lower parts are yellow-green, and the sexual fronds at the tips of the blades are reddish-yellow clusters. The leaves die back in winter and re-grow in spring.

In the 19th century it became a target for fern collectors and was a popular plant in mansion gardens. This, and the draining of fens, caused it to become fairly rare in the wild.

Welsh names for the fern refer to it variously as royal, noble, twined (from the plaited leaves), and fox (for the colour of the fertile leaves). The use of Christ and Mary in the name signify its medicinal uses. *Dibedoliad y meirch* (horses' unshoeing) refers to an old belief, usually relating only to the moonwort, that a horse would lose its shoes if it were ridden over this fern.

Medicinal uses

A viscous slime found in the roots and thick leaf stems was used to make several kinds of medication. Ointments and poultices were used to ease the pain of internal and external bruising, rheumatism and gout, and the roots boiled in white wine were thought to cleanse the kidneys and bladder. A broth made from it was reputed to 'kill all kinds of tapeworm'.

The fern was particularly used for the mending of broken or dislocated bones and sprained joints: "For breakage of ribs. Make a drink of the royal fern…and water, and make a plaster of a measure of two-rowed barley flour and sheep's dung… and apply it as a plaster externally and as a drink internally…and [the rib] will be healthy." (*A Welsh Leech Book*, 16th century).

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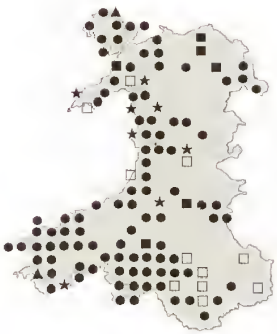


Dosbarthiad y rhedynen gyfrdwy yng Nghymru, ynghyd â dyddiad y cofnodion

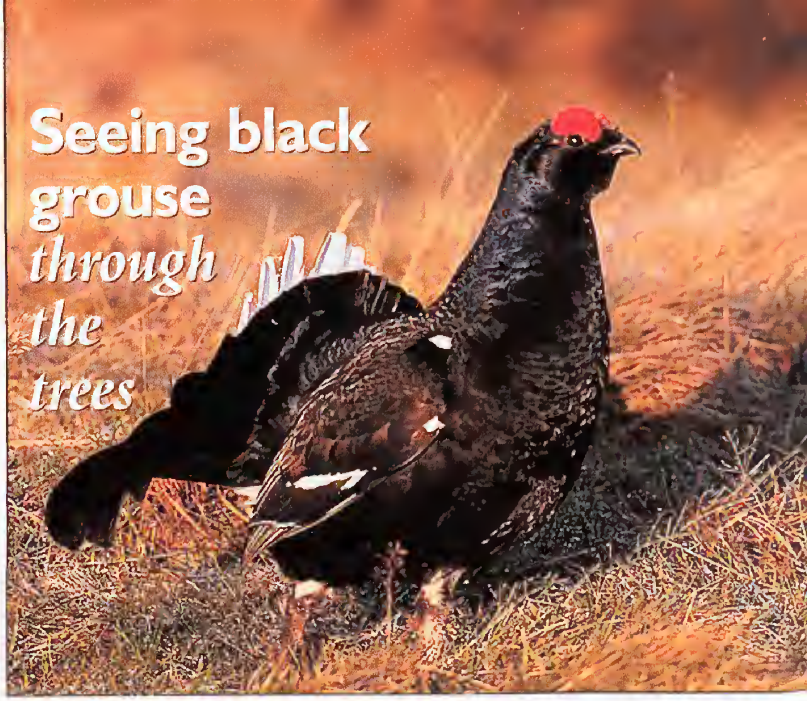
- ● 1970-1995
- ■ 1950-1969
- ★ 1930-1969
- ▲ cyn 1950
- □ a blannwyd rhwng 1970 a 1995

"An ecosystem is a tapestry of species and relationships. Chop away a section, isolate that section and there arises a problem of unravelling."

David Quammen
The Song of the Dodo

Seeing black grouse through the trees

Black grouse displaying provide a spectacular but increasing rare sight. Now help is at hand. ***Patrick Lindley*** *and* ***Dave Smith*** *report on a remarkable success story.*



Male black grouse displaying. Photo: © RSPB.

Photo: © RSPB.

"I can see four males, and they are really having a good fight," whispered Iolo, conservation manager with Forest Enterprise. I crouch down, screened by trees, to witness the drama that has unfolded in the uplands since the Ice Age. A side step, neck craned, one of the combatants jostles and counter jostles and then performs the *coup de grace*, a stunning strike to his opponent's scarlet eye comb. The loser, falling from grace, retreats to the security of tall heather. Lost in the drama of the moment, both Iolo and I watch patiently, hands numb with cold as the April sun rises above the darkness of the moor. You may be forgiven for thinking that the event witnessed was a territorial brawl between top predators. Not so, it is an intricate display performed every spring on traditional mating arenas (leks) by the thespians of the bird world – male black grouse. However, this spectacle, often viewed by many as one of the ornithological wonders of the uplands, is perilously close to disappearing.

Photo: © RSPB.

A chronic decline

The black grouse is declining rapidly throughout large parts of its natural range in Europe[1,5]. This large-scale decline is mirrored in the UK where black grouse may have undergone a 75% decline between 1990 (estimated 25,000 lekking males) and 1995/1996 (estimated 6,510 lekking males). In Wales, historical population estimates of black grouse are vague. Nevertheless, anecdotal evidence suggests a serious decline occurred in the 19th century throughout the principality, except in Breconshire. With the continued loss of fringe native woodland between marginal farmland and the moorland edge, by the 1940s black grouse were in 'free fall'

decline throughout Wales and were considered in all counties to have an 'uncommon' status.

However, it is generally agreed that post-war afforestation in the uplands initially led to an increase in the species' range and numbers. With the exclusion of sheep, important food plants such as heather and bilberry flourished within these young plantations and the open canopy structure provided shelter and nesting cover. With a quarter of the Welsh uplands planted predominantly with non-native Sitka spruce these large-scale forests looked attractive habitats but flattered to deceive. The densely planted trees quickly grew and shaded out favourable food plants. With many upland forests reaching closed canopy in synchrony, black grouse began to be squeezed outside the forest to occupy a niche devoid of tree cover – open moorland.

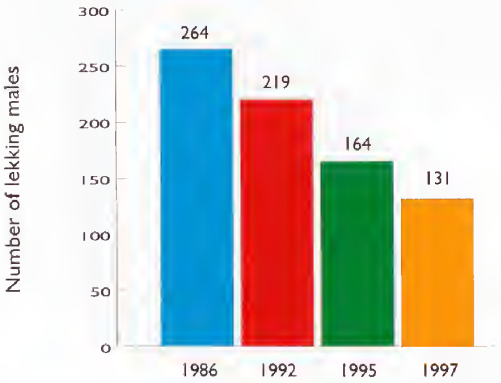


Figure 1 *The number of displaying male black grouse in Wales (1986-1997)*

Despite the surprising upsurge in numbers, by 1975 there was evidence of an equally dramatic decline. This decline prompted the first systematic survey of black grouse in Wales in 1986 which recorded 264 displaying males.[3] Repeat surveys in 1992 and 1995 showed numbers had further declined and by 1997 black grouse numbers had diminished by 50% since the first Welsh survey in 1986 (*Fig 1.*) Various other causes of the decline in black grouse have been identified; some factors may result in habitat fragmentation and direct loss of habitat, while other more subtle changes may reduce breeding success and adult survival.

Photo: © RSPB

Black grouse require a patchwork of different habitats.

Fighting species extinction: The Welsh Black Grouse Recovery Project

With the speed of population decline, there was agreement by a group of Welsh conservation agencies and organisations that unless a large-scale intervention project was implemented to arrest the decline, black grouse in Wales would be extinct within 10-15 years. With this in mind, following successful grant applications to the European Union (European Agriculture Guidance and Guarantee Fund) and National Assembly for Wales (Rural Development Grant), coupled with substantial investment from RSPB, Forest Enterprise and the Countryside Council for Wales, the Welsh Black Grouse Recovery Project was launched in 1999. Following small scale management initiated in 1997, between 1999-2001 the recovery project integrated a comprehensive suite of habitat prescriptions at 6 black grouse sites (termed key areas) in mid and north Wales (Llandegla and Ruabon Moors, Clocaenog, North Berwyn, Pâle, Llanbrynmair and Migneint/Dduallt). Collectively these sites are referred to as the project core area and comprised 80% of the remaining blackcock (male black grouse) population in Wales in 1997.[6]

The recovery project had the following three key aims:

- In the short term (3 years), arrest the long-running decline of black grouse.
- In the long term, increase the range and numbers of black grouse.
- Develop public awareness of the plight of black grouse and the measures to reverse the current decline.

What do black grouse require?

The habitat requirements of black grouse are complex. They are a sedentary species that require a continuous mosaic of upland habitats such as wet heath, blanket bog, and open forest for feeding, displaying, breeding, roosting and moulting. The majority of black grouse in Wales (over 90%) are now associated with upland conifer plantations that have a mosaic of vegetation communities along the forest edge with a well-developed ground layer of heather and bilberry.
We know black grouse favour an open patchwork of widely spaced trees with a regenerating ground layer of bilberry, heather and grasses. The question facing the project was how to replicate this environment? With a legacy of mature, close ranked, impenetrable stands of Sitka spruce characteristic of many forest edges the answer was more problematic.

Working closely with Forest Enterprise, Tilhil Forestry and Canon Farm, the project identified 5 forests within the core area that could be managed for black grouse on a large scale (>50ha). Here we removed different densities of trees (up to 90% removal at a maximum height of 7m) over large areas to create the desired 'feathering' along forest edges and rides. After tree removal, the canopy is opened to sunlight and the vital components of black grouse diet (heather, bilberry and cotton grass) quickly regenerate. When completed, the forest edge structure resembles the loose structure of Northern Fenno-Scandinavian forests.

The next phase was to focus on managing the tall, uniform, ungrazed ground layer within and outside these forests. Extensive areas of tall, continuous heather can hinder chick movement and may chill small chicks leading to death during bouts of continuous cold, wet weather. In the absence of natural forest herbivores that would have grazed and browsed the ground layer, the project used novel intervention practices developed by the RSPB at their Lake Vyrnwy Reserve. Mowing a patchwork of small blocks and strips of heather on the open moor and within forest firebreaks, rides and tree-thinned areas, with either a tractor mounted flail or manually operated brush-cutters, created the mosaic of vegetation that black grouse require. Mires and wet flushes, where sedges and grasses predominate, are insect-rich areas and thus important feeding areas for black grouse and broods. As well as forest thinning and heather management, the project has managed and reinstated some wet areas by rendering drains and ditches ineffective.

During 1999 to 2001, 1,400ha were managed directly for black grouse. All the habitat management within the project core area was undertaken by hired contractors (local where possible) and represented 3,052 contractor man-days or 14 man-years (1 man year equals 220 man days).

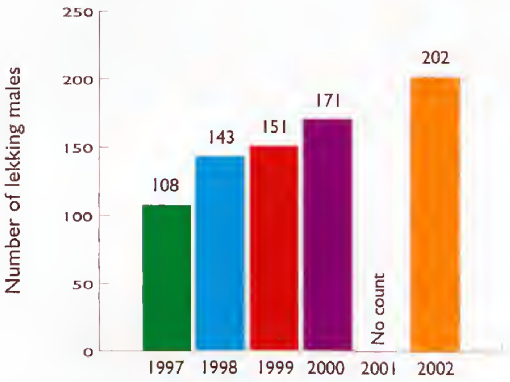


Figure 2. The number of displaying male black grouse within the project core area (1997-2002)

Status of black grouse in Wales: census update

Because black grouse are secretive and elusive, the only practical survey method to measure populations is to count displaying males on their lek sites in spring[2]. Systematic searches of all leks within the key areas were conducted between 1997-2002, (except in 2001 – cancelled due to the outbreak of Foot and Mouth). The leks were visited once between 15 April to 15 May and all displaying males counted to assess population change. The lek counts between 1997 and 2002 show an increase of 94 males or 87% (*Fig 2*). However, this comparison should be treated with caution, due to incomplete lek coverage in 1997. A comparison between 1998-2002, suggests a more realistic population increase of 59 males (41%).

The 2002 lek counts suggest the numbers of displaying males within the project's core area are showing signs of recovery and increase. The results from the Wales 2002 Black Grouse Census reveal that where no favourable management outside the project core area has occurred black grouse are continuing to decline in numbers and range. Yet the census estimates a Welsh black grouse population of 260 lekking males, (Lindley *et al.* in prep.), almost on par with the 1986 survey population of 264 males.[3]

Photo: © RSPB.

Male black grouse at a 'lek'.

Part of the success of the Welsh Black Grouse Recovery Project is due to the behind scenes toil of our project partners, land owners, farmers, game managers, conservationists and local contractors. With black grouse widely recognised as a Welsh forest edge species, support from the Welsh forestry sector has and will continue to be vital. Forests, upland heath and marginal farmland, always changing in structure, will require further conservation intervention to encourage black grouse to stay and to re-colonise formerly occupied haunts. RSPB Cymru will continue to work closely with the farming, game and forestry sectors, and we hope that black grouse can once again be observed through the trees.

Patrick Lindley, RSPB's Black Grouse Officer for Wales, has run the recovery project over the last three years, assisted by **Dave Smith**.

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Adfer y Grugieir Du

Mae un o ryfeddodau byd adar yr ucheldir mewn peryg o ddiflannu – perfformiadau cystadleuol ceiliogod y rugiar ddu. Mae'r aderyn yn cilio trwy Ewrop, gydag amcangyfrif o ostyngiad o 75% yn y DU rhwng 1990 ac 1996. Erbyn yr 1940au roedd yn lleihau'n ddychrynllyd yng Nghymru ac, er fod coedwigo wedi'r rhyfel wedi helpu i ddechrau, roedd niferoedd wedi haneru rhwng 1986 ac 1997. Lansiwyd Cynllun Adfer Grugieir Du Cymru yn 1999, gan ddefnyddio cyfuniad cynhwysfawr o ddulliau adfer cynefin mewn 6 safle yn y Canolbarth a'r Gogledd.

Roedd tri nod:

- Atal y gostyngiad o fewn tair blynedd.
- Cynyddu niferoedd ac ehangu ardal yn y tymor hir.
- Codi ymwybyddiaeth.

Mae angen brithwaith o gynefinoedd ar y rugiar ddu ond mae hynny'n anodd lle mae coedwigoedd pin yn ddwys. Felly, dewiswyd 5 coedwig i'w teneuo er mwyn hybu llystyfiant sy'n fwyd i'r aderyn. Y cam nesa' oedd rheoli grug trwy ei dorri ac adfer rhai llecynnau gwlyb. Rhwng 1998 a 2002 bu cynnydd o 41% mewn ceiliogod yn ardal y prosiect. Y tu allan iddi, mae'r dirywiad yn parhau.

Opening up the forest – a new prospect for Newborough

The plantation covers much of the former dunes.. Photo: John Rateliffe.

While the conservation of nature has traditionally been a rear-guard struggle, a new age of ambitious habitat restoration projects is dawning. ***James Robertson*** *considers what it would take to transform a large plantation on Anglesey into a mosaic of trees and open duneland.*

Anglesey is roughly diamond-shaped; at its southern apex, the ocean has deposited a convincingly acute angle of sand, which trails into the sea like the string of a kite, ending at Abermenai Point. Across the narrow mouth of the Menai Strait, the sand dunes continue on the mainland, south of Caernarfon.

This is the strangest of the angles of Anglesey; it is old, and yet has constantly reinvented itself, changing its contours and at times inundating human settlements and over-running farmland, a reminder of the dynamic power of nature. It is a sandscape of marram-covered hills, some gouged out by the wind into moon craters, and low-lying slacks, which can turn to shallow lakes in winter.

Photo: Mike Hammett

Common blue butterfly.

Until the middle of last century there were nearly 1,300ha, or five square miles of this Lawrence of Arabia landscape, lying between the Menai Strait and the Cefni estuary. Unstable and subject to wind-blows, the dunes were ideal territory for those once scarce and prized food animals, rabbits. The whole area was shown as a warren on the first Ordinance Survey maps of 1850. At that time it also provided huge quantities of marram grass for the manufacture of ropes and mats, nets and cordage, and even shoes.

The arrival of forestry and conservation

The abundance of rabbits, before myxomatosis decimated the population in the 1950s, combined with military use during the last war, resulted in a period of great sand movement, raising fears of inundation

in the village of Newborough. After the war the Government handed the management of half the sand dunes nearest the village to the Forestry Commission. Their brief was to establish a forest of mainly Corsican pines, which would stabilise the dunes and provide local employment while producing timber.

The conversion of half of Newborough warren's vast acres to forest encountered hardly a murmur of opposition. Timber production was a national priority, and there appeared to be few drawbacks, such as lost grazing, to offset the benefits to the local community. The unplanted dunes still covered an enormous area, and contained an abundance of rare plants and animals. In 1955, the Nature Conservancy declared the unafforested Newbororough Warren a National Nature Reserve, only the second in Wales.

Photo: CCW

The young plantation, Whit Sunday, 1966.

Forty years later, in 1995, the dunes were put forward as a Special Area of Conservation (SAC) under the European Union's Habitats Directive. But the forest was excluded from the SAC, apart from small patches where the rare shore dock was hanging on. This was due to a reluctance to designate large and potentially controversial areas. The review of SACs requested by the European Union in 1999 has prompted a more holistic approach to the SAC boundary definition at Newborough, which now encompasses the whole sand body in recognition of its ecological integrity.

Skylarks outside the dark forest

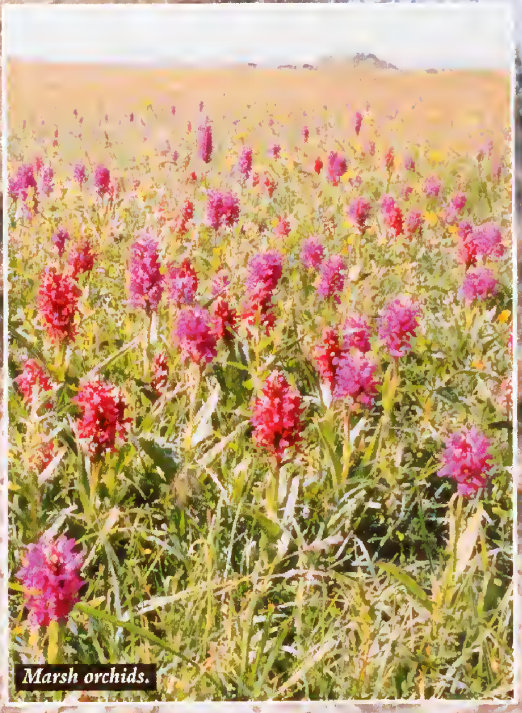
Step into this duneland world, and you will discover how pulsating with life it is. Skylarks soar and hover, their songs filling the air, while beneath them waves of marsh orchids bring vivid splashes of colour to the dune slacks in early summer. As the season progresses, the scent of thyme grows stronger, and its purple flowers attract brightly coloured six-spot burnet moths and common blue butterflies which come to sip the nectar.

The adjacent forest has fossilised 700ha. of dunes, so that the sand dune landforms are frozen in time, beneath a dark, silent cloak of trees. Where trees are planted up to the beach, they prevent natural recovery and re-vegetation of the dunes after winter storms, leaving steep sand cliffs between the forest and the sea. Where attempts have been made to protect the trees from the forces of erosion, through the construction of a wooden 'revetment', of brushwood fences or by thatching and re-profiling frontal dunes, these have largely failed, and they cause unwelcome interference with natural coastal processes. Conifer litter smothers most of the natural dune flora leaving only sand sedge, dune helleborine and round leaved wintergreen in any abundance. As the forest matures and the soils develop, brambles, lady fern and common woodland mosses carpet the floor.

Most serious for the dunes which are not afforested, the forest has sucked water from the aquifer just below the surface and has dried out the unplanted dunes. Winter flooding of dune slacks has decreased over the last forty years and is now a rare occurrence, limited to slacks furthest from the forest. Dune slacks within the forest which were not planted fifty years ago because they flooded in winter are now completely dry all year round. Rainfall averages have not changed for Anglesey over this period, but the loss of water from the forest canopy (estimated at between 10.8 and 19.2mm/day) compared to that from the dune vegetation (less than 2mm/day) may explain the change.

Dune helleborine.

Main photo: Paul Kay
Photo: CCW



Marsh orchids.

Photo: Peter Rhind

Hypholoma marginatum.

Photo: CCW

Round leaved wintergreen.

Fifty years after the first trees were planted, there are new national priorities, and much has changed at Newborough. The Government and Assembly have drawn up a national Biodiversity Action Plan, in recognition of the huge losses of habitats and wildlife since the war. Many sand dunes, such as those along the north Wales coast, have been lost to golf courses, holiday developments and, of course, forestry. Sand dunes are an exceptionally diverse and rare habitat internationally, and special efforts are needed to conserve what is left. Wales has some of Europe's best sand dune systems, Newborough being amongst the top sites.

At Newborough the Commission has a great opportunity to restore the natural 'sandscape' of this unique corner of Anglesey, and increase its biodiversity without losing some of the benefits which the forest has brought.

For there are many attractions for visitors and wildlife within the forest. Most of the quarter of a million visitors a year come to the car park near the beach, which gives easy access to the coast. Many walk along the beach and cross the causeway to Ynys Llanddwyn. Others walk along the various forest tracks and through the dunes. The shelter provided by the forest is particularly welcome in winter. A car park by the road also gives access to the forest.

Photo: Peter Rhind.

Photo: CCW.

Six-spot burnet moth.

Re-shaping the forest

So is it time to think the unthinkable; that the forest should be cleared, and the sand dunes restored to their former glory? No-one is calling for the destruction of the forest, which has become very much a feature of the Newborough area, with its own conservation and recreational value. But many conservationists would like to see a re-shaping of the forest, with the area of plantation being reduced by less than a half in order to restore the water table and the mobility of the forward dunes. This is the kind of bold, visionary project which will prove that conservation and the 'sustainable development' agenda have really come of age. It is surely time to open up discussion about the future of the forest. Elsewhere the Forestry Commission has carried out forest redesigns to transform plantations imposed on the landscape into forests which fit into it.

Wildlife uses the forest, too. A small population of red squirrels established itself in the conifer plantations, although it is now thought to be extinct. There is an exceptionally large raven roost located near the central rock ridge, which is free from disturbance and offers good look-out posts within the plantation. Great crested newts and medicinal leeches are found in forest pools, which have been created to provide a source of water in the event of fire, although these are found in greater numbers in the dunes. Visitors to the forest are often struck by the numerous, colourful fungi which grow under the pines, such as the saffron milk cap, and several rare species are only found under the trees. Several rare dune plants hang on in the

plantation, but as the forest becomes darker and more mature, many of these plants will probably disappear. Insect life in the forest is mainly limited to common species, and is not as rich as it would be if the trees were removed.

Sand and trees – a new balance?

Fifty years after the first trees were planted, there is a wonderful opportunity to shrink the forest and bring back the domain of the sand, without losing the benefits which trees bring to this windswept corner of Anglesey. Trees near the frontal dunes could be cleared, to restore the natural processes of sand movement between the beach and the dunes.

Existing clearings could be extended, and new clearings opened up, to allow light back into areas where the original dune vegetation still clings on. The plantation to the east of the rocky ridge could be cleared to restore water levels in the dune slacks. Some of the most recently planted areas to the west of the ridge could be restored to dune grassland. Well established forest areas could be managed for conversion to native dune woodland, a rare feature anywhere in Britain. The main car park could be located a little further inland to allow natural movement of the fore-dunes without threatening visitor facilities.

Most exciting of all is the possibility of re-establishing at least some of the processes that underlie this ecosystem rather than merely the static features. These processes include the movement of sand, to scour out new dune slacks; the unhindered movement of water, to re-wet many of the old dune slacks; and extensive grazing of the dunes and woodlands by large herbivores, to re-create a dynamic landscape where the distribution of dunes and woodland is defined by natural processes, not by a draughtsman with a ruler on a map.

Photo: Mike Hammett.

Great Crested Newt.

Agor y goedwig – dyfodol newydd i Niwbwrch

Mae Coedwig Niwbwrch wedi ei lleoli ar gornel tywodlyd anghysbell o Ynys Môn. Plannwyd y coed cyntaf hanner canrif yn ôl, ac erbyn hyn mae'n llenwi tua hanner ardal y twyni tywod, gyda'r gweddill yn Warchodfa Natur Genedlaethol.

Mae'r goedwig wedi dod â rhai buddion i fywyd gwyllt a hamdden, ond mae hefyd wedi cael effaith andwyol ar ddeinameg naturiol un o systemau twyni tywod mwyaf Ewrop. Ceir cyfle yn awr, trwy bartneriaeth rhwng Cyngor Cefn Gwlad, y Fenter Goedwigaeth a'r gymuned leol, i beri i'r goedwig esblygu'n raddol trwy symud rhai o'r coed oddi yno i greu ardaloedd agored a thrwy ganiatáu i goetir naturiol sefydlu ei hun mewn man arall.

Byddai hyn yn creu dyfodol newydd i Niwbwrch gyda'r bwriad o ailddarganfod prosesau natur.

Sensitively managed, this shrinking of the dune plantation and conversion of the remainder to native woodland would not affect any existing interests, except for a modest long-term reduction in low value timber. Change will not happen overnight, and needs goodwill and cooperation between the relevant statutory and voluntary bodies, including the local community council, which is sympathetic to the needs of managing the site for conservation. Nature conservation in recent decades has been on the defensive. What better start to this millennium than the restoration of one of the finest sand dune systems in Europe?

James Robertson is an environmental writer and editor, and has a small organic farm not too far from Newborough warren.

How to house sparrows – *colonial nest boxes boost house sparrow numbers*

Photo: Michael Smith

Female house sparrow.

The house sparrow, a symbol of our inner cities, has been in decline for the past twenty years. Now help is at hand. Houses have been provided for house sparrows, built in terraces or tenements to encourage their colonial nesting behaviour. ***Tony Jenkins*** *reports on the experiment's resounding success.*

The decline of the house sparrow (*Passer domesticus*) over the last twenty years has been well documented in Britain and Ireland with the most severe declines noted from inner cities. Surveys such as the British Trust for Ornithology's (BTO) Common Bird Census and Garden Bird Feeding Survey have shown that the house sparrow population dropped sharply in the early 1980s, followed by a more gradual but continuing decline to the present day. For example, an 85% decline was reported at Kensington Gardens in London between 1970 and 1995, while numbers dropped by over 50% in rural areas during the same period[1]. House sparrows are now rare in many parts of Britain and have all but vanished from several city centres.

Other seed eating farmland birds have shown similar declines, perhaps indicative of a common cause. Between 1968 and 1991, linnet (*Carduelis cannabina*) and reed bunting (*Emberiza schoeniclus*) both declined in

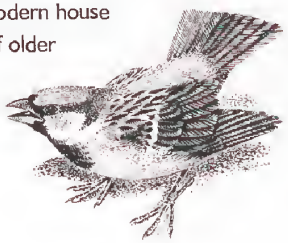
Photo: Michael Smith.

Juvenile house sparrow on the alert.

numbers by over 50% while the tree sparrow (*Passer montanus*) population decreased by over 85% during the same period. The house sparrow decline is not however uniform, but shows considerable regional differences. Numbers in Wales and Scotland have increased since 1994, while in England there has been population variation, with some areas indicating stable numbers[2]. However, across regions, house sparrows in urban localities, particularly inner cities, have been hit hardest. The disappearance of this once abundant species from central London has stimulated much public concern, as reflected in *The Independent* newspaper's campaign to find out what has happened to this emblem of cockney life. Even in suburban localities between rural and urban habitats, which are traditionally thought to represent the best breeding conditions for house sparrows, there has been a 15-20% decline over the period 1978-88[3].

Causes of decline

A number of possible causes have been attributed to this reported decline in the house sparrow population. Crop spraying, selective herbicide application and changes in farming practice (particularly the change to autumn sown cereals) have all been implicated as factors in rural areas, which have also been suggested as the causes of decline in other seed eating farmland birds. Predation, disease, garden pesticides, traffic pollution and a lack of nest sites probably represent the major contributory factors in large conurbations. In the absence of traditional sites, house sparrows sometimes nest in dense hedges and conifers. However, changes to modern house design and renovation of older buildings may have significantly reduced the availability of suitable nesting sites.



Study site

To breed successfully house sparrows require buildings to provide nest sites and open spaces to furnish an adequate food supply. Such conditions are present at the National Wetlands Centre Wales (NWCW), Penclacwydd, Llanelli, where nest boxes, bird hides and outbuildings provide suitable breeding sites. The 16 ha of landscaped grounds also provide a plentiful supply of both invertebrate and grain food. The NWCW lies adjacent to the Burry Inlet, an estuary recognised internationally for its habitats and overwintering waterfowl, that has the most extensive area of saltmarsh (1,600ha) wholly in Wales.

Sparrow terrace

I began monitoring individual nest boxes at the NWCW in 1995 when most of the boxes were occupied by blue tits (*Parus caeruleus*) and great tits (*P. major*), although a few nest boxes with entrance holes larger than 32mm diameter were taken by house sparrows. They also used outbuildings, particularly the Flamingo House, where nests were located on ledges provided by the interior wooden framework. All nesting attempts have been recorded on a weekly basis, and the data submitted on nest record cards to the BTO. Given that house sparrows often breed in loose colonies[4], the provision of multiple nest sites designed exclusively for the species may help the breeding success of local populations.

In 1997, Dr. Derek Thomas (Glamorgan Regional Development Officer, BTO) therefore designed a multiple nest box to encourage house sparrows to breed in adjacent nest sites and the 'sparrow terrace' was constructed and installed at the rear of the Flamingo House prior to the 1998 breeding season. The design incorporates twenty-four boxes in two banks of twelve (dimensions: 140mm high x 195mm wide x 210mm deep for each compartment) sited 2 metres above ground level and each with a 37mm entrance hole.

Importantly, this hole size is larger than the more typical 26-32mm diameter commonly used to attract various tit species, because house sparrows are generally excluded from boxes with such small entrance holes. Unlike conventional nest box designs in which the roof is usually hinged to provide access for monitoring, the compartments of the sparrow terrace have hinged fronts that open from the centre line between the two rows.

Photo: Tony Jenkins.

The terrace of nest boxes, designed for house sparrows.

Early days

I began monitoring the terrace in 1998 when two compartments were occupied. These were located at opposite ends of the terrace, suggesting that the respective occupants obviously required extreme privacy! Double broods were recorded in each box giving a total of four breeding attempts. In 1999 only one box was occupied although two broods were recorded. After two years the experiment had not proved to be a resounding success, with only limited uptake of the terrace by house sparrows. However, this was about to change!

Photo: Tony Jenkins.

Checking the nests.

Success at last

In 2000 no fewer than fifteen of the boxes in the sparrow terrace were used for breeding, ten in the upper and five in the lower bank. One triple and four double broods were recorded, all from the upper boxes, and a total of twenty-one separate nesting attempts were recorded (see *table*). The sparrows had finally decided to move in to the 'terraced houses' *en masse*, and the following year proved even more successful. Twenty boxes were occupied in 2001 that included one triple and eleven double broods from thirty-three nesting attempts. All but one of the boxes in the upper row were occupied, together with nine in the lower bank. Over the four year period of monitoring to date, no other bird species has occupied the terrace, although queen wasps appear to have a penchant for starting new colonies in the boxes!

The results of nestbox occupancy in 2002 were surprisingly identical to those of the previous year with 33 nesting attempts in 20 boxes. Again, eleven boxes in the upper row and nine in the lower bank were occupied. From the early days of 1998-99 this experiment has proved to be a resounding success, which clearly demonstrates both the colonial nesting behaviour of house sparrows and the potential role such multiple nest box designs could play in maintaining the UK population.

Unlike other common nest box species, house sparrows exhibit some unusual traits. Females shoot out of the boxes whenever I approach the terrace which at least makes counting eggs a relatively easy task! Clutches are generally small (3-5 eggs) with an average of 3.9 eggs per nest over the five year period of the study. Nestlings do not have down feathers and are naked until the primary feather quills are fully formed. Adults are never observed carrying food to the nests or seen in the vicinity of the terrace giving alarm calls. Also, the young are very prone to 'exploding' from the nest ie. leaving prematurely before the flight feathers are fully formed, which makes observations towards the end of a nesting attempt somewhat hazardous!

	1998	1999	2000	2001	2002
No. of boxes occupied	2	1	15	20	20
No. of nesting attempts	4	2	21	33	33
No. of eggs laid	12	8	80	121	122
No. of young fledged	4	5	45	67	61
% breeding success*	33.3	62.5	56.3	55.8	50.0

* Percentage breeding success is calculated as the number of successfully fledged young relative to the number of eggs laid.

The future

In gardens where house sparrows are regular visitors, the provision of nest boxes with entrance holes of 32-37 mm diameter may encourage this declining species to breed. A smaller version of the sparrow terrace, incorporating three compartments, is currently offered for sale by CJ Wildbird Foods in Shropshire. The national press has also recently stressed the need for garden nest boxes to provide entrance holes large enough to attract house sparrows[5].

At the NWCW future research will include a colour-ringing scheme for nestlings to establish whether young house sparrows return in following years to breed at their natal sites.

Finally, the BTO's theme for National Nest Box Week in February 2002 was the 'Plight of the House Sparrow'. The decline of this species was highlighted and the general public asked to provide nest boxes with large entrance holes in the hope that the fortunes of this once ubiquitous bird may be reversed.

Acknowledgements

I am grateful to Dr. Derek Thomas for his original idea of a sparrow terrace at the NWCW, which inspired my ongoing study of this species. My thanks are also due to Dr. Geoff Proffitt (Curator) and Nigel Williams (Reserve Manager) both for assistance with the project and for permission to access the study site. I also thank my son Richard, for his constructive comments on the manuscript.

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Tony Jenkins is a consultant hydrobiologist with a longstanding interest in the role of nestboxes for conservation.

Teras i adar y to

Fe allai arbrawf gyda nythod teras yng Nghymru helpu i ddod ag adar y to yn ôl yn gry' i ardaloedd yn Lloegr. Cafwyd canlyniadau trawiadol o waith sy'n digwydd yn y Ganolfan Wlyptiroedd Genedlaethol ym Mhenclacwydd ger Llanelli.

Yn 1998, gosodwyd 24 o flychau nythu mewn dwy res, gyda thyllau digon mawr i adar y to. Ar ôl dau dymor siomedig, cafodd 15 o'r blychau eu defnyddio yn 2000 gan godi i 20 yn y ddau dymor ers hynny. Cafodd mwy na 60 o gywion eu deor yn y teras y ddau dro hwnnw. Fe allai'r blychau gyda'r tyllau mwy fod yn batrwm at y dyfodol ac mae fersiwn masnachol eisoes ar werth.

Er eu bod ar gynnydd yng Nghymru ers 1994, fe fu dirywiad mawr yn nifer yr adar to mewn ardaloedd gwledig a threfol, er enghraifft yng nghanol Llundain, lle maen nhw'n symbol o fywyd y Cocni.

Photo: Tony Jenkins.

What will another year bring?

The history, status and control of **common cord-grass in Wales**

Photo: Peter Rhind.

Common cord-grass invading mud flats on Anglesey.

Common cord-grass arose in Southampton Water from a natural hybrid and gives point to the term 'hybrid vigour'. Originally introduced to help bind mud and accumulate land, it quickly got out of control and became a conservation problem, threatening mudflats which were important for wildlife. Much time and energy has been spent controlling it over the last thirty years or more, but has this effort been worthwhile? Signs are that common cord-grass is loosing its powers. **Peter Rhind** *reports.*

Of the three species of *Spartina* found in Britain only one, common cord-grass *Spartina anglica*, occurs in Wales. This vigorous, fertile plant was derived from the sterile hybrid between small cord-grass and smooth cord-grass, which arose naturally in Southampton Water sometime prior to 1870. Later at this site the species transformed itself into the fertile common cord-grass through a doubling of the chromosomes of the hybrid. It was deliberately introduced into the Severn estuary as a mud-binder in 1913 at Clevedon in Somerset. From here it probably established itself on the Welsh side of the Severn and was recorded in 1920 when it was introduced to the Dyfi Estuary near Glandyfi. Today the species has spread to virtually every saltmarsh in Wales. In the 1960s about 1306 ha of land dominated by common cord-grass was recorded in Wales, and by the 1980s this had risen to approximately 1,680ha.

Despite this rise there is both anecdotal and documentary evidence to suggest that common cord-grass is now partly in decline. For example, a recent survey (2000) of saltmarsh in the Dee Estuary showed that it had declined by about 90% since 1983. There are similar reports for other parts of the UK, and this has been attributed to various causes, including cessation of sediment accretion, oxygen deficiency, water logging, pathogenic fungi and wave damage. It has also been put down

to an inherent loss of vigour within the species, possibly due to its lack of genetic variation. Nevertheless, despite over two decades of research, the reason for this phenomenon has still not been fully resolved, and dieback may be the result of several factors.

Photo: Peter Rhind

Common cord-grass in flower.

Control measures

Efforts to control common cord-grass have been carried out at many sites around Wales.

Malltraeth estuary, Anglesey

A control programme involving spraying and digging was started in the early 1970s by the Nature Conservancy Council. Although it was at first successful, the plant rapidly regenerated and grew back. Further control, initiated in 1978, had produced little effect by 1982, but by 1987 it had largely been cleared from the lower saltmarsh and was being contained in other areas. To keep the species in check it was necessary to spray on an annual basis. This control programme was ended in 1998 for two reasons: firstly because the spray was also damaging *Salicornia* and other saltmarsh pioneer species (now listed as a qualifying SAC feature for this site), and secondly because there was increasing acceptance of common cord-grass as an integral part of the saltmarsh.

Red Wharf bay, Anglesey

Two attempts have been made to control common cord-grass by Anglesey Borough Council. The area was sprayed in 1970-71, but although this may have slowed down its rate of spread, it did not halt its progress. A survey in 1980 showed that its overall area had increased to about 2.6ha. A second attempt was made in September 1982, but by1983 the estimated area of common cord-grass marsh had expanded to 5.02ha.

Conwy estuary, north Wales

Attempts to control the plant in the upper reaches of the estuary were initiated by Aberconwy Borough Council, but in the event only a one-day pilot study to assess the effectiveness of hand spraying was undertaken, and no follow-up work was carried out.

Borth-y-Gest harbour, Porthmadog

A more determined effort was carried out by Dwyfor District Council. By 1977 common cord-grass had spoiled a sandy amenity beach in the harbour, but attempts to remove it by bulldozer and digging were ineffective. Later between 1984-86 more success was gained by spraying. The herbicides were applied using backpack sprayers and by 1986 between 70-80% had been eradicated.

Dyfi estuary

After a pilot project by the Nature Conservancy Council to assess the effectiveness of spraying, several plots were sprayed in Wader Bay in August 1989, but no visible effects could be detected by June the following year, when the programme was abandoned.

Blackpill, Swansea Bay

In one of the longest campaigns, Swansea City Council spent some 14 years trying to eradicate common cord-grass. At least three determined attempts were made using a combination of herbicides and excavators. Unfortunately, much of it appears to have been unnecessary since recent geomorphological changes have now made the area unsuitable.

Mawddach estuary, Snowdonia

Finally, the most ambitious eradication programme in Wales was carried out by the Snowdonia National Park. In 1989 approximately 54 ha were sprayed by helicopter. The following season, 'kills' of between 60-80% were recorded in some areas, but other areas were unaffected. One of these, Coed y Garth, was re-sprayed in 1991, but this also proved to be ineffective. A survey in 1993 indicated that some of the sprayed areas had not re-grown, but in other areas rapid re-colonisation had taken place and its rate of spread had actually accelerated.

New controls

More recently, English Nature has pioneered a new technique of control. It involves a form of ploughing called 'rotoburying', which effectively turns the entire plant upside-down and buries it to a depth of about 30cm. Early indications suggest that the procedure is effective.[1] Six years after plots of the grass had been rotoburied at Lindisfarne NNR there was no sign of it returning. The newly formed mudflats have now been recolonised by invertebrates, and waders have returned to feed in the area for the first time in five years. However, because the procedure requires the use of a tractor and a stone-burying machine, it is difficult to apply in very muddy situations.

Rheoli cordwellt

Mae cordwellt wedi lledu i bron bob morfa yng Nghymru ers ei gyflwyno'n fwriadol ddechrau'r ganrif ddiwetha'. Hyd yn ddiweddar, roedd ar gynnydd, ond mae arwyddion bellach ei fod yn cilio. Cafwyd sawl ymgais yng Nghymru i reoli'r planhigyn, sy'n fygythiad i aberoedd cyfoethog eu bywyd gwyllt. Cymysg fu llwyddiant y rheiny. Er fod English Nature wedi arloesi'n llwyddiannus gyda dull roto-gladdu, sy'n troi'r planhigyn ben chwith lawr a'i gladdu, byddai'n anodd gwneud hyn ar dir mwdlyd iawn. Beth bynnag, os yw'r tueddiadau presennol yn parhau, fydd cordwellt ddim yn elfen amlwg o aberoedd gwledydd Prydain yn y degawdau nesaf.

Conservation implications

According to Doody[2] the nature conservation pros and cons of common cord-grass can be summarised as follows:

Detrimental effects

- Invades and degrades inter-tidal flats rich in marine invertebrates utilized by overwintering waders and wildfowl.
- Replaces more diverse plant communities.
- Produces dense, monospecific swards, which can alter natural succession.
- Promotes the potential for agricultural reclamation.

Possible beneficial effects

- Prevents coastal erosion and stabilizes mudflats.
- Aids reclamation for agriculture.
- Contributes to the productivity of estuarine ecosystems.
- Creates additional saltmarsh habitat via succession.
- Has value for research.

On balance, though, Doody concludes that common cord-grass must be regarded as a threat in estuaries of high wildlife interest, both to bird populations and to natural saltmarsh succession. However, if current trends continue it should be considered a declining threat in Britain, and it will become an insignificant component of British estuaries over the coming decades. Any large-scale control programme would not be recommended.

Peter Rhind is Coastal Ecologist with the Countryside Council for Wales and editor of the recently published *Flowering Plants of Snowdonia*.

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Re-introductions – *the wider benefits*

Are re-introductions a help or a hindrance to wildlife conservation? Nigel Ajax-Lewis got the debate going in the last issue. Here ***Ian Carter****, who has played an active part in the successful re-introduction of the red kite to England and Scotland, strikes a positive note in favour of bird re-introductions.*

Photo: Ian Carter.

Red kite chick, from a nest in the English Midlands.

Y ddadl am ail-gyflwyno

Bydd llawer o adarwyr pybyr yn teimlo siom o sylweddoli fod dyn wedi ymyrryd i gynnal rhywogaeth ond dyw'r cyhoedd yn gyffredinol ddim yn teimlo felly. Elfen fach fydd ail-gyflwyno beth bynnag – gwarchod a rheoli cynefinoedd yw'r allwedd. Dyw ail-gyflwyno diangen, sy'n rhoi'r argraff fod atebion hawdd ar gael, o ddim help i neb. Mae angen ystyried y tymor hir. Am gyfnod byr y bydd angen ymyrraeth fel arfer ac mae ail-gyflwyno'r barcud yn Lloegr, er enghraifft, wedi creu diddordeb mawr a all helpu adar ysglyfaethus eraill. O ran barcutiaid Cymru, roedd eu cronfa genetig yn wan. Heb ail-gyflwyno rhywogaethau gyda geneteg mwy amrywiol efallai na fyddai eu dyfodol yn sicr.

The article by Nigel Ajax-Lewis in the Summer issue of *Natur Cymru* raises some very interesting issues concerning species re-introductions, a subject that has long been controversial within conservation circles. Despite my involvement in the red kite re-introduction programme, I found myself nodding in agreement with many of the concerns that Nigel raised.

I was reminded of an experience some years ago when bird-watching in the northern mountains of Majorca. My first ever sighting of a black vulture started out as a truly thrilling experience as this huge flying-door of a bird came drifting slowly towards me. Then I noticed the unmistakable rectangles of plastic, flapping gently on the upper surface of the bird's wings. As is the case with red kites released in England and Scotland, this bird had been wing-tagged. Suddenly, what had been a hugely impressive symbol of those wild, rugged mountains, came to represent the degree to which human activities had adversely affected the area's wildlife. Black vultures had once been common on the island but had been persecuted to near extinction and, as I later confirmed with a local naturalist, a re-introduction programme was in progress to restore their population.

Some birdwatchers (and almost all photographers!) equally dislike the wing-tags seen on released, and some wild-fledged, red kites in Britain. For them, the tags highlight the fact that the bird has been handled by man and it is then viewed as somehow less wild, despite its obvious free-flying state. As in the case of the black vulture, I suspect that for some people the pleasure of seeing a tagged red kite is reduced because they are forced, perhaps sub-consciously, to confront the appalling impact of human activities in the past – the fact that a bird once so common and widespread throughout Britain was all but wiped out at the hands of man, so necessitating the re-introduction programme.

The complaints I have heard about wing-tags, as well as the wider concerns about the justification of bird re-introduction projects, have been voiced mainly by keen birdwatchers or naturalists. It seems not to be an important issue for the very many local people who derive great pleasure from simply watching such a spectacular bird of prey in their local countryside. Non-birdwatchers seem far more ready to take the birds at face value, quickly accepting that they would once have been a common sight in the area and that human intervention was required for them to make such a rapid comeback.

I believe that we should all try to take a long-term view of what might be achieved by species re-introductions. In most bird re-introductions, human intervention is required for only a relatively short period of time. Once a species has been successfully re-established in the wild, increasing and spreading to new areas naturally, then the part played by humans is increasingly forgotten. Not too many birdwatchers think twice when they see a little owl or capercaillie in Britain, yet both these species are only present because of the deliberate release of birds in the past.

It is also important to realise that re-introductions involving high profile, attractive species have considerable knock-on benefits to a range of other wildlife. Local people in the release areas in England and Scotland have taken red kites to their hearts and in the Chilterns projects have been set up specifically to use the red kite to raise awareness of local landscapes and wildlife more generally. Incidents where red kites have been killed by illegal poison baits or as a result of secondary poisoning by modern rat poisons have caused considerable concern and prompted action to try to reduce the threat from such poisons. This will benefit not only the red kite but also other birds of prey and predatory mammals that are affected by the same problems. The disproportionate interest in impressive and easily visible species may be unpalatable to some, but is a fact of life and we need to adopt a pragmatic approach and make full use of such species if the cause of wildlife conservation in general is to be well served.

It may be of some comfort to those who harbour reservations about re-introduction projects that they are only ever likely to play a fairly small role in bird conservation in Britain. Inadequate protection and management of our remaining semi-natural habitats and the increasingly intensive way in which the farmed landscape is managed are the main threats faced by birds today. The majority of birds have good powers of dispersal and are perfectly capable of re-colonising areas where suitable habitat is available within a reasonable period of time. Unnecessary re-introductions do nothing to further the cause of nature conservation, giving the impression that there is always a quick-fix available and potentially distracting attention away from the main threats faced by the species in question. The barn owl is one species where re-introductions have perhaps been used to excess in the past although following a recent Government review there is now a presumption against issuing licenses to permit further releases. In this case, Government accepted the views of conservation organisations that releases did little to improve the conservation status of the barn owl and that there would be greater benefits from focussing effort into the restoration of suitable nesting and foraging habitats.

Returning to the red kite, I would like to end by scotching a myth sometimes put forward by those opposed to the re-introduction programme and to which Nigel Ajax-Lewis referred in his article. The restored populations in England and Scotland, according to his line of argument, will contaminate the gene pool of the native 'British' red kite through interbreeding with birds from Wales. In reality, the Welsh red kites are highly impoverished genetically, having been reduced to just a handful of birds, and perhaps just a single breeding female, in the early part of the 20th century. This was the direct result of human persecution and so is a completely unnatural situation. It is entirely possible that the genetic make-up of the birds imported from Sweden, Spain and Germany is closer to that of the 'old race' of British red kites than are the birds now present in Wales. As is often pointed out, the Welsh red kites would have spread to re-colonise more suitable lowland habitats in England without the reintroduction programme, although this might have taken a very long time. What is less clear is whether this would have provided the firm basis for the bird's long-term future that has now been secured through the re-introduction of more genetically diverse populations outside Wales.

Ian Carter, whose monograph *The Red Kite* (Arlequin Press) was published last year, is an ornithologist with English Nature's Bird Unit, based in Peterborough.

Welsh islands round-up – *north Wales*

Bardsey Island (Ynys Enlli) at sunset. Photo: Peter Hope Jones.

Compiled by ***Geoff Gibbs****, who has recently returned to live on the North Wales coast after 25 years of exile in Essex.*

Bardsey Island

Bardsey (Ynys Enlli) lies 3km off the Lleyn Peninsula; the 178ha island is a National Nature Reserve owned by a Trust established in 1979. Staff and visitors at the Bird & Field Observatory have been studying the island's wildlife since 1953, and the Annual Report for 2001 contains the latest findings. The best general introduction to the island's wildlife is *The Natural History of Bardsey* by Peter Hope Jones, published by the National Museum of Wales in 1988.

Manx shearwaters

Although the Bardsey colony is not as large as those in Pembrokeshire, sustained ringing over the years has produced an extensive data set. The discovery in 2002 of a bird ringed in 1957 made the national press with headlines like 'Britain's oldest known bird'. As it was at least four years old when ringed, this bird was at least 49 by 2002! Its annual movements to and from the wintering grounds off Brazil have amounted to around a million kilometres, the equivalent of a return trip to the moon. With only one egg laid per year, and breeding not starting until they are at least four years old, longevity is of course the order of the day.

Counting these nocturnal seabirds in their colonies is not straightforward, but a well-organised census in 2001, led by Genevieve Leaper, produced a figure of around 10,000 to 16,000 pairs. The lower figure is based on males

responding to taped calls played down burrows, the upper on apparently occupied sites (by visual inspection). This means that about 5% of all the Manx shearwaters in the world nest here. Comparison with previous surveys suggests that the colony continues to grow.

Known predators of shearwaters on Bardsey include large gulls and the breeding pair of peregrines (which feed mainly on shearwaters). A new departure reported in 2002 by Observatory warden Steve Stansfield was egg predation by a pair of carrion crows. Around 70 shearwater eggs were found under the crows' nest in one of the withy beds, with remains of more eggs on the steeply sloping East Side. At least one crow must have learnt to enter the occupied burrows, get past the adult and remove the egg. As this habit is obviously undesirable and could spread to other individual crows, arrangements are being discussed to remove this pair of crows next year.

A conservation conundrum

Seven pairs of red-billed choughs bred in 2001, around 4% of the Welsh population. Although they managed to rear 20 young, the adults were observed making 40-50 minute feeding trips to the mainland, suggesting a shortage of their invertebrate food on the island. Choughs feed mainly on short turf grazed by sheep and rabbits. Although good numbers of sheep still graze the island, the rabbits, which had been on the island for over 600 years, died out after an outbreak of myxomatosis in 1996 (rabbit haemorrhagic disease may have been involved also). A study of chough numbers on the Calf of Man has shown that choughs did best when both sheep and rabbits were present. It was therefore suggested that rabbits should be reintroduced. There are, however, some counter-arguments: CCW point out that rabbits on other Welsh islands have caused the collapse of banks, altered sward composition, and contributed to over-grazing which has led to animal welfare problems. If rabbits were re-introduced, it is very difficult to see how their numbers could be controlled. Further discussion of these complex issues is obviously required.

Cetaceans

Although the Observatory birdwatchers make casual records of these while watching seabirds, the systematic observations in the 2001 report were made by Whale & Dolphin Conservation Society volunteers in August. Harbour porpoise and Risso's dolphin were the main species, with one unidentified whale in Bardsey Sound on 16th August. As elsewhere round the British coast, seabirds often feed in association with these mammals and make them easier to locate.

Photo: Geoff Gibbs.

Arctic tern.

Lichens and buildings

Tony Fletcher from Leicester Museum Service has studied the lichens of Bardsey for many years, finding about 280 species during the summer of 1977. One of the most spectacular is the golden-hair lichen *Teloschistes flavicans* which grows sparingly on the flanks of the 167m 'Mountain'. His records in the 2001 Report add a further 35 species. He stresses that a conservation issue arises from the work of renovating the buildings owned by the Trust. Several new lichen records are from the slate roofs of barns, and Tony has provided detailed advice on how to avoid potentially damaging operations on buildings, walls and elsewhere.

Accommodation on Bardsey: residential accommodation is available on a weekly basis, crossings on Saturdays (weather permitting). For the Bird and Field Observatory, contact Alicia Normand (01626 773908, email: bob&lis@solfach.freeserve.co.uk). To rent one of the island houses owned by the Bardsey Island Trust, contact Simon Glyn, Coed Anna, Nanhoron, Pwllheli, Gwynedd LL53 8PR. Information on day trips is available locally.

Photo: Geoff Gibbs.

Terns breed near the Skerries helipad.

The Skerries

The Skerries are a cluster of low-lying, inter-connected islands approximately 3km off the north-west coast of mainland Anglesey. They consist of relatively low (max height c20m) rocky outcrops with a shallow but stable soil-cap supporting a limited but representative range of coastal plant species such as common scurveygrass, lesser sea-spurrey, red fescue and common sorrel.

The RSPB has been wardening the islands since 1989. The society has an annual licence with Trinity House which allows two wardens to occupy redundant accommodation in the lighthouse buildings from early May until mid August.

The islands had a history of supporting large numbers of breeding terns until the 1950s. They were re-colonised by arctic terns in 1980, by roseate terns in 1987 and by common terns in 1991. Although it has been suggested that rats caused the original desertion of the islands there is no definitive evidence for this and it remains unclear why the terns deserted and subsequently re-colonised the islands.

Arctic terns have gradually increased to the 2002 total of 1600 pairs, the largest colony in the Irish Sea. Their productivity has been particularly good recently (estimated at >1.3 fledged young/pair in each of the past 5 years). Common terns now number 100 pairs, but roseate terns last bred in 1997 (1 pair) and despite regular summering by a few individuals have not established themselves.

Around 250 pairs of puffins breed, making this the second largest colony in north Wales, after the Gwylan Islands in Aberdaron Bay. Other breeding birds include great and lesser black-backed gulls, and herring gulls (800 pairs in 2002). As well as the bird interest on the island there are also good numbers of grey seals present – frequently 60-70 animals.

Thanks to **Alastair Moralee** (RSPB) for the Skerries information.

Ynysoedd y Gogledd

Dangosodd cyfrifiad yn 2001 fod 10-16,000 o adar drycin Manaw yn Ynys Enlli – 5% o'r holl niferoedd trwy'r byd. Yn ogystal â gwylanod a hebogiaid tramor, daeth yn amlwg fod pâr o gigfrain yn eu difa ac mae bwriad i'w symud oddi yno y flwyddyn nesa'. Problem arall i'w thrafod yw ail-gyflwyno cwningod. Fe fyddai'r rheiny'n help i greu amodau ffafriol ar gyfer y brain coesgoch sy'n nythu yno, ond maen nhw hefyd yn difrodi tir ac fe allai fod yn anodd i'w rheoli. Ar Ynysoedd y Moelrhoniaid ger Ynys Môn y mae'r casgliad mwyaf o fôr-wenoliaid y Gogledd ym Môr Iwerddon a'r ail gasgliad mwyaf o balod yng ngogledd Cymru.

Wil Jones

Fe gwrddais â Wil Jones tua deng mlynedd ar hugain yn ôl pan ymunodd â'r Warchodfa Natur fel warden ar gyfer gwarchodfeydd natur cenedlaethol Maentwrog. Daeth â sgiliau, agwedd a phrofiad i'r sefydliad – elfennau prin iawn yr adeg honno – sef gwybodaeth wyddonol ac ymarferol o ecoleg coetiroedd derw cynhenid a gwybodaeth o fyd natur ynghyd â'r profiad o fod wedi gweithio ar y tir a dysgu mewn ysgolion. Roedd yn aelod newydd trawiadol o'n tîm. Yna datblygodd ffyrdd o gyfathrebu sydd, erbyn heddiw, yn amhrisiadwy i gyrff cadwraethol llywodraethol ac anllywodraethol sy'n gorfod dibynnu mwyfwy ar ewyllys dda a chydweithio rhwng pobl sy'n byw mewn cymunedau gwledig ac sy'n ennill eu bywoliaeth trwy gyfrwng y tir. Llwyddodd i gynnwys y gymuned yn yr egwyddorion a'r arferion a gyfrannai at warchod natur, yn ystod cyfnod pan oedd llawer yn gwrthwynebu'n gryf y syniad o gael gwarchodfeydd natur a fyddai'n cystadlu â chynhyrchiadau amaethyddol a choedwigaeth fasnachol.

Rai blynyddoedd yn ddiweddarach, trefnais seminar er mwyn dod â wardeniaid Prydain ynghyd i ganolbwyntio ar yr angen i ddiffinio'n well swyddogaethau'r rhai oedd ar flaen y gad o ran cadwraeth. Cyflwynwyd papur gan Wil o'r enw *Communication with the local community*. Roedd yn gampwaith, a bu'n sail i bolisïau wardenio'r dyfodol. Ddarllenais ef eto rai dyddiau'n ôl. Mae'n dadansoddi'n ddwfn strwythurau cymdeithasol cymunedau gwledig a'u hagweddau tuag at yr amgylchedd naturiol, ac mae'r cyfan mor fyw a pherthnasol heddiw ag ydoedd ugain mlynedd yn ôl. Roedd Wil Jones yn feddyliwr gwreiddiol gyda'i draed yn gadarn ar y ddaear. Hefyd, roedd ganddo allu rhyfeddol i berswadio'i gydwladwyr i roi sylw dyledus a blaenoriaeth i warchod y dreftadaeth naturiol a oedd o'u hamgylch.

Roedd tri dimensiwn yn perthyn iddo o ran bod yn gadwraethwr proffesiynol. Yn gyntaf, ei fagwraeth fel siaradwr Cymraeg brodorol yng nghymuned wledig arbennig Gwynedd. Cymraeg a siaradai o'r cychwyn cyntaf; meddyliau Cymraeg a wibiai drwy'i ben; ac yr oedd yn cyflawni ei waith o safbwynt ei brofiadau ef fel Cymro Cymraeg. Ond fe sylweddolai mai tasg fyd-eang oedd gwarchod y blaned. Doedd o ddim yn blwyfol. Yn ail, deallai gymhlethdodau'r gymuned yr oedd yn byw ac yn gweithio ynddi, ei naws a'i sensitifedd, ynghyd â hanes a diwylliant y bobl. Teimlai fod yn rhaid iddo gynnwys y bobl yma yn ei waith. O ganlyniad, daeth gwarchod natur yn nyffryn Maentwrog, a thrwy De Gwynedd, yn rhywbeth a oedd a wnelo'r gymuned gyfan, ac yn weithgaredd pwysig a oedd yn cynnwys y bobl leol. Yn drydydd, roedd yn briod â phostfeistres Croesor. I'r Warchodfa Natur, ac yn ddiweddarach i'r Cyngor Gwarchod Natur a Chyngor Cefn Gwlad Cymru, Wil Jones ydoedd, warden uchel ei barch yng ngwarchodfeydd Maentwrog. Ond i bobl Maentwrog, Wil Post oedd o, sef gŵr un o'r bobl bwysicaf ym mywydau'r rhai a oedd yn byw yng Nghroesor neu ger Croesor!

Ers dod yn ymddiriedolwr i'r Gronfa Loteri Treftadaeth, rwy'n ymwybodol iawn o'r angen enbyd am fynediad deallusol a chorfforol i dreftadaeth naturiol gwarchodfeydd natur a thirweddau nas difethwyd. Enwau rhai fel Wil Jones sy'n dod ar frig y rhestr wrth i rywun ddyfeisio a hybu polisïau i wella mynediad o'r fath. Yr oedd yn un o hoelion wyth y sefydliad treftadaeth naturiol yn hyn o beth. Dangosodd i ni sut i fod yn agored a sut i ddeall, gan ganolbwyntio'n arbennig ar Gymru, ac yn hyn o beth chwalodd yn chwilfriw y syniad o wahardd mynediad a nodweddai'r mudiad gwarchod natur yn ei flynyddoedd cynnar. Parhau i gynyddu y mae ei ddylanwad, ac y mae ei syniadau wedi eu sefydlu eisoes yn y dulliau newydd o ymdrin â natur a chefn gwlad. Mae ein colled yn fawr ar ôl y gâr bonheddig hynaws a charedig yma. Roedd yn gyfaill ac yn gydweithiwr i lawer ohonom. Braint oedd cael gweithio ag o, a gallwn ymfalchïo yn yr hyn a gyflawnodd.

Tom Pritchard, Cyfarwyddwr dros Gymru, Cyngor Gwarchod Natur, 1973-1991

Remembering Wil Jones

Wil Jones, Warden for the Maentwrog Nature Reserves, was born and raised in rural Gwynedd. He had a native's instinctive understanding of his surroundings and yet was never parochial; he saw his work as part of the wider task of protecting the planet. He involved his community in the principles and practices of nature conservation and had an uncanny perception of how to persuade his fellow countrymen to give rightful priority to protecting their natural heritage. He will be much missed by his friends and colleagues.

Hela'r **carlwm**

Roedd ffwr gwyn y carlwm yn ystod y gaeaf yn cael ei ystyried yn werthfawr iawn am ganrifoedd. Ond wrth i'r byd gynhesu, a fydd y lliw yma i'w weld mor aml? Mae ***Duncan Brown*** *yn gobeithio dod o hyn i'r ateb.*

Ffoto: Duncan Brown.

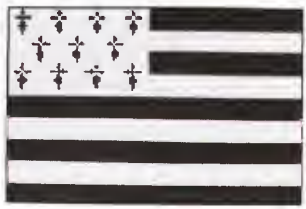
Y mysg yr anifeiliaid a'r planhigion y bûm yn eu cofnodi dros y blynyddoedd y mae'r carlymod, yn enwedig rhai yn y gaeaf, ac yn bennaf, y rhai sydd wedi troi'n wyn. Un yn unig welais i â'm llygaid fy hun, ond cefais wybod am amryw gan fy ffrindiau.

Pan cofnodi carlymod gaeaf felly? Dyma rai o'r cwestiynau y gallwn eu hateb o dderbyn digon o gofnodion:

Ydi'r carlwm y troi'n wyn yn y gaeaf:
- yn amlach ac am gyfnod hwy yn y Gogledd?
- yn amlach ac am gyfnod hwy yn yr ucheldir?
- yn llwyrach yn y Gogledd ac yn yr ucheldir?
- i raddau llai heddiw nag ers talwm (oherwydd Newid yn yr hinsawdd efallai?)

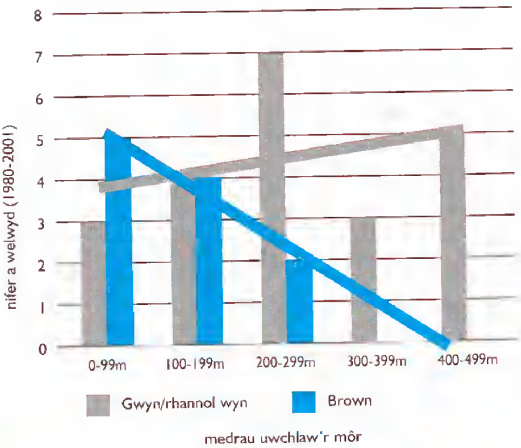
Ffeithiau am y carlwm

- Hyd y dydd sydd yn rheoli pryd y bydd y carlwm yn bwrw ei flew ac yn adnewyddu ei gôt
- Ei wrth pennaf oedd fel croen amheuthun i addurno clogynnau'r uchelwyr
- Ar faner Llydaw, cynffonnau carlymod/carlymod gwyn (ermin) yw'r smotiau duon sydd i'w gweld ar y sgwâr gwyn. Mae gan garlymod gwynion gynffonau duon bob amser. Pan gâi'r cwyn cyfan eu defnyddio i wneud clogynnau, roedd y cynffonau'n creu patrwm o smotiau duon ar wisg a oedd, heblaw am hynny, yn wyn. Mae'r gwyn yn cynrychioli purdeb i'r dugiaid Llydewig (yr adeg honno, roedd Llydaw yn dalaith annibynnol)



- Yn yr (hen) Undeb Sofietaidd nid ydynt yn troi'n wyn yn yr ardaloedd lle bydd eira yn gorwedd am lai na 40 diwrnod y flwyddyn
- Mae'r benywod yn troi'n wyn yn amlach na'r gwrywod
- Ymadrodd ar lafar: "cyn wynned â charlwm"
- Yn yr hen gyfreithiau Cymreig (13G) dywedir: *Tri phryf ydyly y brenhineu gwerth py tu bynhac y llather, llostlydan, a beleu, a charlwnc.* (Tri anifail sydd o werth i'r brenin o'u hela, yr afanc, y bela a'r carlwm)
- Credir i'r gair carlwm darddu o *cardd* (carcharor, sef yr ysglyfaeth a *llwng* (llwnc)

Ffigwr 1. Carlymod Cymru yn y gaeaf yn ôl eu lliw ac uchder uwchben lefel y môr lle'i gwelwyd.



Looking for the stoat

So far I have records of 45 sightings of stoats in Wales. I am interested to know whether stoats turn white in winter:

- mainly in the North?
- mainly in the uplands?
- more in the North than the uplands?
- less today than previously?

Facts

- Daylight length determines when the stoat will moult and renew its coat
- The black spots on the Breton flag are ermine tails.
- More female stoats turn white than males
- "Kings should value three animals...the beaver, the marten and the ermine." (Welsh Laws, 13th century)
- It is thought that the Welsh word 'carlwm' comes from 'gulping prey'

Sightings in Wales

It seems from evidence so far that white/partially white stoats are seen at high and low levels, but that brown stoats are seen mainly in the lowlands. However, more data is needed, in particular about stoats that remain brown during the winter.

If you see, or have seen, a stoat between October and March, please send me details of when and where, and what the stoat was doing. Note the colour, but remember that all stoats have white chests throughout the year, so a partial ermine will have white somewhere other than on its chest.

Duncan Brown, CCW, Maes y Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DN.
Email: d.brown@ccw.gov.uk

Lle cawsant eu gweld yng Nghymru

Hyd yma llwyddais i gasglu 45 o gofnodion o Gymru. Yn anffodus, i raddau bychan iawn y mae'r rhain yn ateb y cwestiynau uchod. Mae *Ffigwr 1* yn dangos beth mae 33 o'r cofnodion hyn (sef y rhai sydd yn cynnwys lleoliad manwl) yn ei ddweud am ddosbarthiad y carlymod (y ddau liw) rhwng lefel y môr a'r copaon uchaf.

Os yw graff sydd wedi ei seilio ar gyn lleied o gofnodion yn golygu rhywbeth o gwbl, mae'n ymddangos ei fod yn dweud bod carlymod gwyn, neu sy'n rhannol wyn, i'w gweld ar unrhyw lefel, isel neu uchel, ond bod y rhai lliw arferol yn debycach o fod ar yr iseldir yn unig.

I ateb y cwestiynau uchod yn iawn mae'n rhaid
a) cael llawer mwy o ddata, a
b) cofnodi carlymod yn y gaeaf nad ydynt mewn gwenwisg yr un mor drwyadl â'r rhai gwyn neu led-wyn.

Felly, a fyddech cystal ag anfon cofnodion i mi ynghylch unrhyw garlymod a welwyd gennych rhwng Hydref a Mawrth, yn y gorffennol ac o hyn ymlaen. Does dim gwahaniaeth pa liw ydynt, cyn belled â'ch bod yn cofnodi eu lliw. Ond cofiwch fod gan bob carlwm fynwes wen drwy gydol y flwyddyn ac y bydd gan garlwm sydd yn datblygu ei wenwisg aeaf rannau gwyn mewn mannau eraill yn ogystal â'r fynwes. Wnewch chi, os gwelwch yn dda, gynnwys y manylion canlynol:

- Eich enw a'ch cyfeiriad.
- Pwy welodd y carlwm?
- Pa liw oedd o (heblaw am ei fynwes wen), brown, gwyn ynteu rhannol wyn?
- Pryd welsoch chi o (y dyddiad yn llawn NEU fis neu flwyddyn os nad ydych yn cofio).
- Ble welsoch chi o (enw'r lle a chyfeirnod grid).
- Beth oedd o yn ei wneud?

Diolch yn fawr iawn.

Duncan Brown, e-bost: d.brown@ccw.gov.uk
CCGC, Maes y Ffynnon, Penrhosgarnedd, Bangor, Gwynedd LL57 2DN

Mae **Duncan Brown** yn gweithio yng Nghyngor Cefn Gwlad Cymru fel Warden Gwarchodfa Natur Genedlaethol Coedydd Aber.

Nodiadau'r **Cynulliad/Assembly** *Notebook*

gan/by **Gethyn Williams**

Dyw gwyliau'r haf yn y Cynulliad ddim mor dawel â hynny. Mae yna lawer i fynd â'r sylw y tu ôl i'r llenni, ynghanol y paratoadau ar gyfer tymor newydd ac wrth i'r pedair plaid wleidyddol geisio cael y pleidleiswyr i feddwl yn galed yn y cyfnod cyn etholiadau'r flwyddyn nesaf.

Ers y Nadolig, rydym wedi gweld llond llaw o ACau yn cyhoeddi y byddan nhw'n rhoi'r gorau iddi ym mis Mai. Mae rhestrau'r pleidiau wedi dechrau siapio a bydd wynebau newydd yn dod i'r Siambr y flwyddyn nesaf. Bydd rhaid aros i weld pa mor effeithiol fydd y to newydd a faint o grebwyll y maen nhw wedi ei ennill o'r tu allan yn ystod tymor cynta'r Cynulliad.

Rydym yn sicr yn gobeithio y byddan nhw'n llenwi esgidiau rhai y bydd colled ar eu hôl: wrth i Dr Phil Williams o Blaid Cymru fynd, bydd y Cynulliad yn colli cefnogwr huawdl i ynni adnewyddol, yn ogystal ag un o aelodau mwy uniongyrchol a gwybodus y Pwyllgor Datblygu Economaidd. Yn yr aelod Llafur, Richard Edwards, hefyd, mae'r sector Amgylchedd yn ffarwelio â Chadeirydd Pwyllgor cryf sydd wedi rhoi gwasanaeth da i'r Cynulliad gyda'i ymarferoldeb egwyddorol. Bydd Tŷ Crughywel hefyd yn colli llaw ddiogel Dafydd Wigley ar y llyw, gan fod ei brofiad gwleidyddol yn llawer mwy na'r rhan fwyaf o'i gyfoedion.

I eraill, er hynny, dyw'r calendr erioed wedi bod yn brysurach. Wrth ddod yn ôl i Lywodraeth y Cynulliad, cymerodd Mike German gyfrifoldeb am bwnc newydd, Datblygu Gwledig a Chymru Dramor. Tra bod swyddogion y Cynulliad wedi treulio'r haf yn smwddio'r mân rychau yn swydd Mr German, roedd y Gweinidog ei hun wedi mynd ati ar unwaith gydag ymweliad uchel-ei-broffil â'r Sioe Fawr yn Llanelwedd, tra'n mynd i'r afael â phwnc pigog yr adolygiad canol-tymor o'r Polisi Amaeth Cyffredinol (CAP).

Trwy argymhellion y Comisiwn Ewropeaidd, gallai'r DU weld newidiadau yn agwedd y CAP at y farchnad, gyda symudiad oddi wrth sybsidi uniongyrchol tuag at ragor o fodiwleiddio a chynlluniau amaeth-amgylcheddol. Fodd bynnag, dyw manylion argymhellion y Comisiynydd Fischler ddim wedi eu rhyddhau eto, felly wyddon ni ddim faint o gyfle fydd hyn i amaeth Cymru ac, yn ehangach, i gefn gwlad. Yr hyn sy'n sicr yw y gallwn ni ddisgwyl gweld cynlluniau polisi arwyddocaol gan Weinidog sydd wedi dod trwy'r felin ac sy'n awyddus i wneud ei farc cyn i Gymru a'r Llywodraeth Bartneriaeth wynebu etholiadau. Bydd y Gweinidog yn rhan o drafodaethau ar lefel y DU a'r UE – elfen y mae'r Cynulliad fel petai'n ymgyfarwyddo â hi. Yn wir, mae swyddogion y Cynulliad wedi bod yn weithgar o fewn gweithgorau ar y pwnc yma. I Mike German, i Lywodraeth y Cynulliad ac i'r Cynulliad yn gyffredinol, mae'r mynydd yn tyfu o hyd.

Gethyn Williams yw Swyddog Gwybodaeth Cymru ar gyfer Cyswllt Bywyd Gwyllt a Chefn Gwlad Cymru.

Summer recess at the National Assembly is not as quiet a time as it may seem. There is much to distract us behind the scenes, as preparations are made for the new term and the four political parties will be seeking to concentrate the minds of the voters in the run up to next year's elections.

Since Christmas we have seen a trickle of AMs announce their intention to stand down in May. Party lists have begun to grind into action and new faces will enter the Chamber next year. It remains to be seen how effective the new flock will prove to be, and what savvy they have acquired as outsiders to the Assembly's first full term.

We certainly hope they can fill the boots vacated by some, whose departure is regrettable: in Plaid's Dr Phil Williams the Assembly loses a very vocal supporter of renewable energy, not to mention one of the more direct and informed members of the Economic Development Committee. In Labour's Richard Edwards too, the Environmental sector says farewell to a strong Committee Chair whose principled pragmatism has served the Assembly well. Crickhowell House will also miss the steady tiller of Dafydd Wigley, whose political experience dwarfs most of his contemporaries.

For others, however, the calendar has never been busier. Mike German's re-admission to the Welsh Assembly Government in July saw him take on a new brief, that of Minister for Rural Development and Wales Abroad. Whilst Assembly officials spent the summer break 'ironing out' the finer creases of Mr German's responsibilities, the Minister himself hit the ground running with a high profile appearance at the Royal Welsh Show, whilst getting to grips with the thorny mid-term review of the Common Agricultural Policy (CAP).

Under European Commission proposals, the UK could see changes in the market mechanisms on CAP with moves away from direct subsidy and further towards modulation and agri-environment schemes. However the detail of Commissioner Fischler's proposals has not yet been released, so how great an opportunity this is for Welsh agriculture and in wider terms the countryside, is still unknown. What is certain is that we can expect to see some significant policy initiatives from a battle-hardened Minister who will be keen to make his mark before Wales and his Partnership Government go to the polls. The Minister will be involved in negotiations at a UK and EU level, something the Assembly seems to be getting used to, indeed Assembly officials have been active within EU working groups on this issue. For Mike German, the Welsh Assembly government and the National Assembly as a whole, the learning curve gets steeper all the time.

Gethyn Williams is Assembly Information Officer for Wales Wildlife & Countryside Link

Green **Bookshelf**

Andrew Lucas, James Robertson

Birders, Tales of a Tribe

Mark Cocker, Vintage 2002 £7.99 paperback
ISBN 0 099 289547

I'll admit it. As a 'twenty something' birder, I slept rough at the Cley beach 'hotel', ate tonnes of bread pudding at Nancy's, and jostled to the front of a crowd of Glastonbury proportions for a Philadelphia Vireo. So this book, which concentrates on the British, and particularly University of East Anglia, birding scene of the 70s and 80s, held me from the outset. Between '81 and '84 I was, as they say, there.

Starting with a sighting of Satyr Tragopan in Nepal (the poignant significance of which is only revealed at the end of the book), it charts the author's own birding odyssey from his childhood in Derbyshire to the Norfolk birding world. There are chapters on binoculars and telescopes of the times, birding gossip and the ultimate birding sin, stringing. Cocker defines eight sub-clans of the birding tribe, including the sadly over-used term, 'twitcher'. That old canard about twitchers being mindless tick hunters is comprehensively shot. Most of the time, he says, birders who engage in twitching '– do what all bird people do…watching their local patch – sending in their records – or rattling the tin for a conservation charity'. Amen to that, Mark.

The demi-gods of the birder's pantheon are all there: Richard Richardson, who put Cley on the birding map, and inspired a generation of birders; Ron Johns, Britain's top lister; Peter Grant, whose forensic identification techniques revolutionised bird guides. But it's the birds that really shine, such as the Uist Steller's eider, the 1990 Pallas's sandgrouse and the Lundy ancient murrelet. But even species like common swifts get reverential treatment. There's no doubt that this guy loves his birds.

Only towards the end did I become a little frustrated. Am I supposed to be awestruck by the constant lists of exotic places visited by various birders, or their escapades with border guards, hire cars and street robbers? Cocker describes a clique of birders in Norwich at the time, as a 'dynamo of birding energy – committed world birder(s)'. Very true, but others may remember them as introverted, exclusive and, occasionally, dismissive either of other birders or those whose natural history interest lay elsewhere.

There are minor omissions, like the absence of any real discussion of the Isles of Scilly, or the impact of the internet. Nonetheless *Birders, Tales of a Tribe* will appeal to all birdwatchers and, nowadays, that means an awful lot of people. But every naturalist should read Cocker's atmospheric description of great bustards in Spain. This is how birds, indeed how all wildlife, should be.

Quite whether *Birders* will be appreciated outside the tribe is questionable, which is a shame, because it's an exciting book written from the heart. This is a book to enjoy by the fire, to inspire you to get out birding the next day.

Now where are my bins?

Andrew Lucas

The Future of Life

Edward O. Wilson, Little, Brown 2002 £18.99 hardback
ISBN 0 316 64853 1

At times like these, faced with a sombre outlook for the global environment, it is tempting to go along with the latest philosophical fashion: the one that says we are a species like any other, with no more control over our actions, and the effects we have on nature, than polar bears in the Canadian sub-arctic, or red ants putting black ants to slavery. The hope that we can save the world is pure illusion.

Edward O. Wilson's new book *The Future of Life* should dispel such conservation fatigue, and the moral side-stepping which goes with it. Wilson has already tackled the influence of human biology on society (*Sociobiology*), the value of nature (*The Diversity of Life*), the role of the natural sciences in the unity of knowledge (*Consilience*) and the innate love humans have for nature (*Biophilia*). His latest canvas is the thin membrane of organisms wrapped around the Earth called the biosphere. He describes our position as the dominant species at the centre of this web of life thus:

Because all organisms have descended from a common ancestor, it is correct to say that the biosphere as a whole began to think when humanity was born. If the rest of life is the body, we are the mind. Thus, our place in nature, viewed from an ethical perspective, is to think about the creation and to protect the living planet.

Wilson articulates the moral questions at the heart of our world, including the need to lift the poor out of poverty. As he says, science and technology are what we can do; morality is what we should do. In doing so, he deploys a treasure chest of scientific knowledge, and his deep understanding of the non-human world underscores his attachment to it. But his writing is not only lucid and eloquent, it is also ambitious.

Take for example the prologue, a letter to Henry Thoreau. Wilson talks directly to the great American author and naturalist at his cabin at the edge of Walden Pond, and the five intervening generations melt away. The personal way in which he links hands with Thoreau and the natural history of this place, which has exerted such a hold on readers of *Walden*, has a metaphorical resonance: natural history is human history, too; precious indeed are the many fine threads which connect us.

Wilson is able to reinterpret an ant war that Thoreau observed for what it was: a slave raid. Red ants capture black ant pupae to put them into slavery. Humans employ a similar strategy towards other humans, but the choice is ours to make. We understand the moral case against slavery. Meanwhile sub-arctic polar bears are scavenging at human dumps, and entertaining tourists and locals. Do we understanding the moral case against exterminating polar bears, which are likely to be early victims of global warming?

Politicians are busy people, and few will have the time or mental energy to read this book. What a shame. The extended family of nature, and our species in particular, might have a brighter future if the world's leaders had all read *The Future of Life* before they met in Johannesburg.

James Robertson

Marine *matters*

We will fight them on the beaches

You know how it is – you're strolling along the sand, sniffing the breeze and enjoying the sea and tumbling clouds; children and dogs are running in and out of the waves or scrambling over rocks, and all seems right with the world. You head for the spot of silvery sand between two outcrops, thinking to sit for a while. And then there it is. Caught between the rocks is a pile of orange twine, plastic bottles, paper, rags and all kinds of unmentionable sludge.

It's an experience that's only too common. Whether it's dropped by careless visitors or, more likely, washed ashore, litter on our beaches is a big problem. To try and combat this, the Environment Agency are supporting a web site with quick and easy access to beach quality information, so you can check out your destination before you go: http://www.environment-agency.tv/ye/qa-ea-doc/helpus/aesthetics/beaches/default.asp

Better still, **be involved**. The site is "hungry for data". If you would like to help with monitoring or surveying, contact Greg Brina (Environment Agency) by email: beaches@nalg.org.uk or fax 01225 468 935.

Phocine Distemper Virus

In 1988 about 18,000 common seals died of this disease in Europe, including many along the UK coast. An outbreak has been confirmed recently in the Wash off the east coast of England. It is too soon to predict the consequences for seals off UK coasts and in order to be well prepared a central information point for recording and reporting on the progress of the disease has been established. Common and grey seal mortalities are being recorded in the UK by a network of volunteers.

The grey seal *Halichoerus grypus* is by far the most abundant seal in Wales. In north Wales there are a very small number of common seals *Phoca vitulina*, the species currently suffering the PDV outbreak. In 1988 grey seals were significantly more resistant to PDV but it cannot be assumed that this will be the case in 2002. However, some grey seal mortality unrelated to PDV is to be expected particularly during the pupping season.

National helpline

It is natural for seal pups to spend a lot of time on their own on beaches while their mothers are in the water – they are not in distress and need to be left alone. However, if you find a dead or sick seal washed up on a beach please call one of these numbers:

National helpline 08712 447 999
Welsh Mammal Strandings answer phone 01348 875 000
RSPCA central number 0870 5555 999

or email seals@strandings.com

- Never approach a sick or dead seal – some diseases may also be transmissible to humans. Infection by PDV reduces the immune system, resulting in the seal becoming a reservoir for other diseases
- Keep dogs well away – they could contract the disease

Further information

Department for Environment, Food and Rural Affairs: www.defra.gov.uk/wildlife-countryside/ewd/seals/seals.htm
Sea Mammal Research Unit: http://smub.st-and.ac.uk/

The Countryside Council for Wales **INTERTIDAL TEAM** has been out and about this summer; here are some of their findings

Severn Estuary

The Severn Estuary is one of Britain's largest estuaries and has the second largest tidal range in the world. We have been surveying the area since April, sometimes using a hovercraft to cover vast expanses of mud and sand that are too dangerous to visit on foot. We have found some very interesting hydroids and sponges on lower shore bedrock within the Severn. We have also visited Denny Island on the lower edge of the sandbanks on the Welsh/English border. Here we found an old *Sabellaria* reef, which unfortunately appeared to be dead.

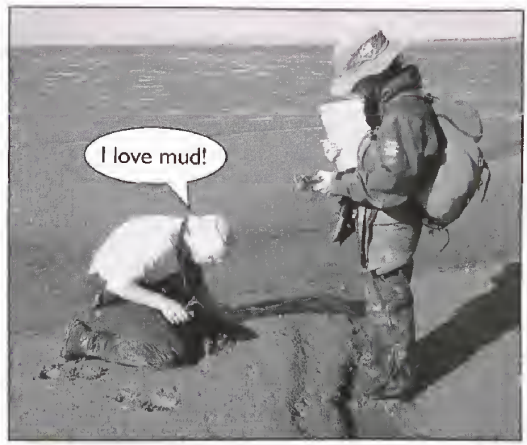
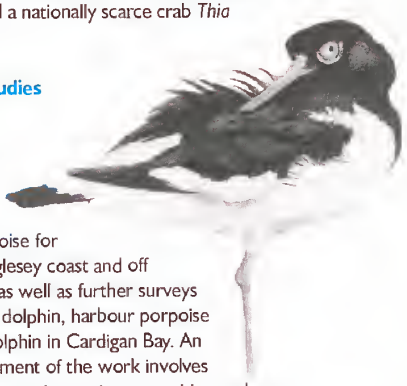


Photo: CCW.

Mud, mud, glorious mud.

Dee Estuary

In June we began the survey of the Dee Estuary with some very early mornings! The Dee Estuary is smaller and sandier than the Severn. We have completed all the foot sites between Point of Ayr (at the mouth of the estuary) and Flint. Using a boat, we have surveyed some of Salisbury middle and all of Salisbury bank where we saw a large colony of seals, boring bivalves (we find them interesting), high densities of cockles and clams and a nationally scarce crab *Thia scutellata*.



Cetacean studies in Wales 2002-2003

We are planning surveys of harbour porpoise for the north Anglesey coast and off south Wales, as well as further surveys of bottlenose dolphin, harbour porpoise and Risso's dolphin in Cardigan Bay. An important element of the work involves training volunteers in species recognition and recording methodologies. Disturbance to cetaceans, particularly from recreational activities, is an important issue that is being addressed by various groups, and we are making efforts to develop a standardised approach to assessing its impact.

Thanks to **Greg Brina**, **Mandy McMath** and **CCW's Marine and Earth Science Group**.

Materion Morol

Sbwriel

Gallwch ddysgu neu roi gwybod am gyflwr traethau trwy wefan arbennig Asiantaeth yr Amgylchedd.

Clefyd y Morloi

Mae clefyd wedi lladd morloi yn nwyrain Lloegr. Mae rhifau ffôn i roi gwybod am forloi marw, ond dylid cofio fod cenawon yn treulio llawer o amser ar draethau heb eu mamau.

Arolwg

Darganfyddiadau tîm rhwng dau lanw'r Cyngor Cefn Gwlad: Aber Hafren – hydroidau a sbwngiau diddorol. Aber Dyfrdwy – llawer o forloi a chranc prin iawn.

Morfilod

Mae arolygon ar droed o lamhidyddion a dolffiniaid Rossi a thrwynbwl.

Biodiversity *news*

FORTHCOMING EVENTS

Where now for Wales? Debate, Decisions, Direction.

Time for Action – a Key National Follow-up Conference to the World Summit on Sustainable Development

A major outcome of the Summit was a declaration detailing the way forward for sustainable development. Wales, with its constitutional commitment to sustainable development, is in an unprecedented position to become a world leader in turning the concept of sustainable development into tangible social, economic and environmental benefits. Such change however requires a commitment from all sectors towards this common goal.

The City and County of Swansea is hosting a conference entitled 'Debate, Decisions, Direction' at Swansea's celebrated Brangwyn Hall on the 3rd and 4th December. The aim of the conference is to bring together key thinkers, decision makers, leaders, analysts and advisors from all sectors to prioritise sustainable development issues in Wales and actually influence how we as a nation take these forward. Check out the conference website at http://www.swansea.gov.uk/wssd

In addition to this national conference the City and County of Swansea is supporting The Environment Centre, Swansea in a grass roots sustainable development conference to be held at the Guildhall, Swansea on the 5th December. For enquiries about the grass roots conference contact Jenny Newman, The Environment Centre, Tel: 01792 480 200

Kerry Curran

Nature Kimroo

"Ghoti" said George Bernard Shaw when discussing English pronunciation, and he might have been talking about something in *Natur Cymru*. We are pleased to welcome many subscribers from outside Wales and appreciate that non-Welsh speakers, wheresoever they may be, may have difficulties with the Welsh language, not least the name of the magazine itself. Take heart – unlike English, Welsh is a phonetic language. If you learn how to pronounce the letters correctly they will see you through the entire Welsh vocabulary (small print; except the letter y. The management accepts no responsibility for the mispronunciation of this letter.) Of course, not all the letters are easy to pronounce (*ch*, *ll*, *u*, *si*...) but at least they're consistent!
Here are some notes which we hope will help:

Natur Cymru

The closest pronunciation in English (the Welsh *u* is particularly difficult for those not used to it) would be:
Natur – To rhyme with '**privateer**' and sounding nothing like 'nay-chure'!
Cym – as in Harry **Se*combe***.
Ru – as in **Griffith** (Anglicised spelling of the Welsh 'Gruffydd', pronounced the same).
Nateer Cumry – easy.

And what was GBS talking about? Try taking the 'gh' from tough, the 'o' from women and 'ti' from action.

Natur *y byd*

Nid pawb sy'n gwirioni yr un fath – ail-ddarganfyddiad yr Heboglys Eryri

Hywel Roberts, Warden Cwm Idwal

Ym mis Gorffennaf eleni ailddarganfuwyd yr heboglys Eryri (*Hieracium snowdoniense*) yng Ngwarchodfa Natur Genedlaethol Cwm Idwal yn Eryri. Ar ôl chwilio dyfal ers rhai blynyddoedd gan fotanegwyr, cafwyd hyd i'r planhigyn gan y botanegwr Tim Rich o Amgueddfeydd ac Orielau Cenedlaethol Cymru a Scott Hand, Hywel Roberts a Janet Buckles o Gyngor Cefn Gwlad Cymru.

Nid oedd yr heboglys arbennig yma wedi ei weld yn y Cwm ers bron i hanner canrif, pan y'i cofnodwyd gan Peter Sell a Cyril West. Roedd y rhain yn arbenigwyr ar adnabod gwahanol fathau o heboglys. Bu chwilio garw ers 1953 amdano, a disgrifiwyd cael hyd iddo eto eleni fel "cael hyd i ryw fath o ddodo Cymreig" gan Tim Rich.

Pleser o'r mwyaf oedd cofnodi'r planhigyn, sydd efallai yn profi pa mor llwyddiannus yw'r rheoli sydd ar bori yn y Cwm. Mae nifer y defaid yno wedi lleihau yn arw ers 1998, trwy gytundeb â'r ffermwr a'r tirfeddiannwr (sef Yr Ymddiriedolaeth Genedlaethol). Awgrymwyd mai pwysau pori trwm gan ddefaid sydd wedi achosi i'r planhigyn fod mor anodd i'w ailddarganfod, trwy rwystro blodeuo a chynhyrchu hâd. Adnabyddir y rhywogaeth yma o'r heboglys trwy nifer y blodau melyn/aur ar ganghennau byr, tyn ar ben coesyn syth, gyda'r blodyn ieuengaf ar flaen y clwstwr o flodau.

Gall dylanwad pori hefyd fod yn ffactor yn nirywiad poblogaeth heboglys prin arall a geir yn Eryri sef yr *Hieracium holosericium* – yr oedd Evan Roberts, warden cyntaf Cwm Idwal yn y 1950au mor hoff o gyfeirio at gael hyd iddo ar y llechweddau. Ym mis Awst eleni, dychwelodd Tim Rich a Scott Hand i Gwm Idwal a chasglwyd hadau o'r planhigyn. Y gobaith felly yw bod ffynhonnell o hâd tuag at barhad y rhywogaeth brin yma yn ddiogel nid yn unig ar lechweddau Cwm Idwal ond hefyd yn yr Ardd Fotaneg Genedlaethol yn Llanarthne.

Photo: Scott Hand.

Hieracium snowdoniense.

Nature at large

The rediscovery of the Snowdonia hawkweed

In July 2002 a rare species of hawkweed, the Snowdonia Hawkweed (*Hieracium snowdoniense*) was rediscovered at Cwm Idwal NNR, not having been seen for nearly 50 years. It was last recorded at the site by P.D. Sell and Cyril West in 1953. *Hieracium snowdoniense* is one of the approximately 400 microspecies of *Hieracia* currently recognised in Britain. It is therefore typical of this group in being very difficult to identify without detailed knowledge of its structure and habitat. This micro species is identified by its racemose flower head structure (with the youngest yellow/gold flower at the head of a cluster of flowers on the end of a straight stem).

It is probable that the discovery of this flower is an indication of the success of the recently implemented grazing management at the NNR. In 1998 an agreement was reached with the farmer and the owner (National Trust) to remove sheep grazing from the site, and so benefit the rare and typical upland vegetation. It is hoped that this management will also result in recovery of other plants including one other *Hieracium*, namely *Hieracium holosericium* (Beautiful hawkweed), which has been recorded there in the past. It would be a fitting memorial to Evan Roberts, the first nature reserve warden for Cwm Idwal, if this plant which he enthused so much about was to be re-found in the same way as *Hieracium snowdoniense*.

Nature *in reserve*

Merthyr Mawr Warren declared as a National Nature Reserve

The coast between Porthcawl and Ogmore is dominated by the rolling sand dunes of Merthyr Mawr Warren. This is a unique landscape in Britain; the sand has been carried far inland over an ancient limestone sea cliff, giving rise to the slightly spurious claim that the dunes are the highest in the country! In addition, lime-rich springs emerge from the bottom of the buried cliff giving rise to wide deep pools in the winter and ephemeral streams in the summer. The largest of these springs is called Burrows Well and the pools it feeds can be 2m or more in depth.

Though not as extensive as Kenfig to the west, this is still a big dune system with the full range of wildlife habitats associated with such places. There are 32 different plant communities, plus a group associated with the Burrows Well pools that defy classification and which may therefore be unique. From the statutory protection standpoint however, it is the dune grassland and slack communities that make the Warren a candidate Special Area of Conservation under the European Habitats Directive. Another European feature is the petalwort *Petolophyllum rolfsii*, a rare liverwort resembling a tiny cabbage. What really attracts the eye though, and makes an early summer visit to the Warren such an invigorating experience, is the sheer exuberant abundance of flowers.

There are 437 different flowering plants at Merthyr Mawr including 14 nationally scarce species such as sea heath *Frankenia laevis* and hutchinsia *Hornungio petraeo*, and several locally scarce ones including yellow bird's-nest *Monotropo hypopytys*, white horehound *Morrubium vulgore* and birthwort *Aristolochio clemotitis*. Excitingly, there are also one or two plants which though extinct, might just re-appear as a result of disturbance by natural sea erosion or movement of the ephemeral streams or by the tender ministrations of a mechanical excavator!

If this were not enough, Merthyr Mawr is one of the top sand dune sites in Wales for both fungi and invertebrates. CCW's invertebrate specialist Adrian Fowles has described Merthyr Mawr as the best sand dune site for insects in South Wales, particularly for beetles, solitary bees, sand wasps and flies. There are 28 confirmed Red Data Book species with another dozen or so waiting confirmation, including half a dozen flies new to Britain.

In short, Merthyr Mawr Warren is a very special place for wildlife, a fact acknowledged a long time ago by local naturalists and the old Nature Conservancy who designated Merthyr Mawr as a Site of Scientific Interest in 1950, amongst the first such designations in Wales. Most importantly, the value of the Warren was recognised by Jennifer and Murray McLaggan, who have had the often thankless task of managing this valuable though economically unrewarding land for many years. One of the less desirable features of the Warren is the abundant presence of sea buckthorn *Hippophoe rhomnoides*, a shrub introduced in the nineteenth century to stabilise the dunes. This was spreading at an alarming rate and in 1995 Mr and Mrs McLaggan asked the Countryside Council for Wales (CCW) for advice and assistance with its control. This led to an invitation to CCW to lease the Warren and to take on other aspects of its management. Around 50% of the sea buckthorn has now been removed and follow up work carried out to prevent re-infestation and to control weeds.

Whilst it was possible to use a mechanical excavator fitted with a weed rake for some of this work, it has also been necessary to clear significant areas with hand-held machinery, in order to avoid damage to historical landscape and buried archaeological features. Much of the Warren is scheduled as an Ancient Monument because of these features and a wide range of finds – mesolithic flints, neolithic pottery, bronze age burial mounds, iron age hearths and Roman tiles and beads.

As well as leading to the restoration of a flower-rich dune grassland, clearance of the sea buckthorn is returning areas lost to the public for family picnics, dog walking and other outdoor recreation. The McLaggans have always welcomed people on foot and horseback to the Warren, which is particularly popular with orienteers, athletes and rugby players for training purposes. These activities will continue on the NNR though some measures have or are being introduced to ensure public safety, protect vulnerable wildlife and archaeology and to preserve the quiet amenity value of the site. CCW will also develop appropriate interpretation and education facilities for the site.

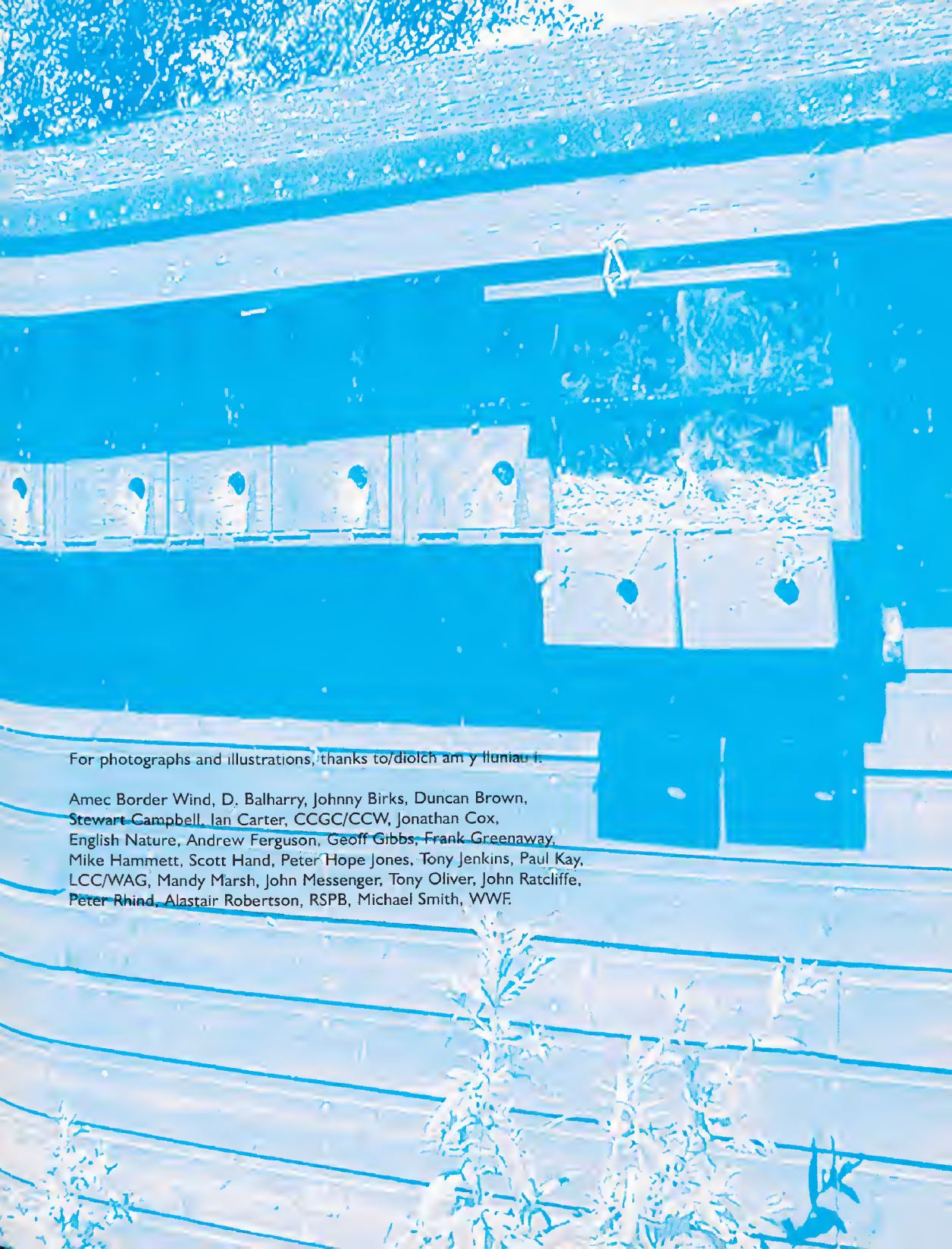
Merthyr Mawr Warren was declared a National Nature Reserve on 3rd July 2002 at an event attended by Carwyn Jones AM.

Michael Hughes, Area Warden, CCW South Wales.

Natur mewn gwarchodfeydd

Gwarchodfa ym Merthyr Mawr

Ym mis Gorffennaf, cafodd Twyni Merthyr Mawr eu troi'n Warchodfa Natur Genedlaethol. Mae'r safle'n unigryw yng ngwledydd Prydain, gyda thywod wedi ei sgubo tros glogwyn calchfaen a ffynhonnau calch sy'n creu pyllau dyfnion. Ond, yn ogystal â'r 32 cymuned o blanhigion a chasgliad hynod o amgylch un ffynnon, blodau yw gogoniant Merthyr Mawr gyda 437 o blanhigion blodeuog gwahanol. Yn eu plith mae 14 rhywogaeth sy'n brin ar raddfa genedlaethol a nifer sy'n brin yn lleol. Ar ben hynny, dyma rai o'r twyni gorau am ffwng ac am drychfilod, gyda 28 rhywogaeth yn y Llyfr Coch a dwsin arall yn aros i'w cadarnhau, gan gynnwys chwe math o bryf sy'n newydd yng ngwledydd Prydain. Dyma pam fod pwysigrwydd Twyni Merthyr Mawr wedi ei hen gydnabod. Ond, oherwydd problemau gyda rhafnwydd, yn 1995, gofynnodd y perchnogion Jennifer a Murray McLaggan i'r Cyngor Cefn Gwlad lesio'r twyni a helpu gyda'u rheoli. Roedd rhaid bod yn ofalus iawn oherwydd pwysigrwydd hanesyddol y safle ond mae hanner y rhafnwydd wedi'i glirio gan adfer porfa flodeuog a chaniatáu llawer rhagor o ddefnydd hamdden o'r twyni. Gyda rhai amodau, bydd hyn yn parhau yn y Warchodfa ac fe fydd rhagor o adnoddau dehongli ac addysgu hefyd.



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www.naturcymru.org.uk